CRPL-F 115

FOR OFFICIAL USE

IONOSPHERIC DATA

ISSUED
MARCH 1954

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
WASHINGTON, D. C.

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CONTENTS

SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given in Document No. 626-E referred to above.

a. For all ionospheric characteristics:

Values missing because of A, C, F, L, M, N, Q, S, or T are omitted from the median count.

b. For critical frequencies and virtual heights:

Values of foF2 (and foE near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of h'F2 (and h'E near sunrise and sunset) missing for this reason are counted usually as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of D are counted as equal to or greater than the upper limit of the recorder.

Values missing because of G are counted:

1. For foF2, as equal to or less than foF1.
2. For h'F2, as equal to or greater than the median.

The symbol W is included in the median count only when it replaces a height characteristic. This practice represents a change from that listed in issues previous to CRPL-F78.

Values missing for any other reason are omitted from the median count.

c. For MUF factor (M-factors):

Values missing because of G or W are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because of E or G (and B when applied to the daytime E region only) are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

Values of fEs missing for any other reason, and values of h'Es missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D. C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If only four values or less are available, the data are considered insufficient and no median value is computed.

2. For the F2 layer, if only five to nine values are available, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as there are at least five values, the median is not considered doubtful.

3. For all layers, if more than half of the values used to compute the median are doubtful (either doubtful or interpolated), the median is considered doubtful.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

The tables and graphs of ionospheric data are correct for the values reported to the CRPL, but, because of variations in practice in the interpretation of records and scaling and manner of reporting of values, may at times give an erroneous conception of typical ionospheric characteristics at the station. Some of the errors are due to:

a. Differences in scaling records when spread echoes are present.

b. Omission of values when foF2 is less than or equal to foFl, leading to erroneously high values of monthly averages or median values.

c. Omission of values when critical frequencies are less than the lower frequency limit of the recorder, also leading to erroneously high values of monthly average or median values.

These effects were discussed on pages 6 and 7 of the previous F-series report IRPL-F5.

Ordinarily, a blank space in the fEs column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of foE. Blank spaces at the beginning and end of columns of h'Fl, foFl, h'E, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of h'Fl and foFl is usually the result of seasonal effects.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. The following points are worthy of note:

a. Predictions for individual stations used to construct the charts may be more accurate than the values read from the charts since some smoothing of the contours is necessary to allow for the longitude effect within a zone. Thus, inasmuch as the predicted contours are for the center of each zone, part of the discrepancy between the predicted and observed values as given in the F series may be caused by the fact that the station is not centrally located within the zone.

b. The final presentation of the predictions is dependent upon the latest available ionospheric and radio propagation data, as well as upon predicted sunspot number.

c. There is no indication on the graphs of the relative reliability of the data; it is necessary to consult the tables for such information.

The following predicted smoothed 12-month running-average Zürich sunspot numbers were used in constructing the contour charts:

Month	Predicted Sunspot Number									
	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945
December		15	33	53	86	108	114	126	85	38
November		16	38	52	87	112	115	124	83	36
October		17	43	52	90	114	116	119	81	23
September		18	46	54	91	115	117	121	79	22
August		18	49	57	96	111	123	122	77	20
July		20	51	60	101	108	125	116	73	
June		21	52	63	103	108	129	112	67	
May		22	52	68	102	108	130	109	67	
April		24	52	74	101	109	133	107	62	
March		27	52	78	103	111	133	105	51	
February	12	29	51	82	103	113	133	90	46	
January	14	30	53	85	105	112	130	88	42	

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 48 and figures 1 to 96 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

Australian Department of Supply and Shipping, Bureau of Mineral Resources, Geology and Geophysics:
Watheroo, Western Australia

University of Graz:
Graz, Austria

Meteorological Service of the Belgian Congo and Ruanda-Urundi:
Leopoldville, Belgian Congo

British Department of Scientific and Industrial Research, Radio Research Board:
- Inverness, Scotland
- Khartoum, Sudan (University College of Khartoum)
- Singapore, British Malaya
- Slough, England

Defence Research Board, Canada:
- Baker Lake, Canada
- Churchill, Canada
- Fort Chimo, Canada
- Ottawa, Canada
- Prince Rupert, Canada
- Resolute Bay, Canada
- St. John's, Newfoundland
- Winnipeg, Canada

Radio Wave Research Laboratories, National Taiwan University, Taipeh, Formosa, China:
- Formosa, China

Institute for Ionospheric Research, Lindau Uber Northeim, Hannover, Germany:
- Lindau/Harz, Germany

The Royal Netherlands Meteorological Institute:
- De Bilt, Holland

Christchurch Geophysical Observatory, New Zealand Department of Scientific and Industrial Research:
- Christchurch, New Zealand
- Raratongo, Cook Is.

Norwegian Defence Research Establishment, Kjeller per Lillestrom, Norway:
- Oslo, Norway

Manila Observatory:
- Baguio, P. I.

South African Council for Scientific and Industrial Research:
- Capetown, Union of South Africa
- Johannesburg, Union of South Africa

Research Laboratory of Electronics, Chalmers University of Technology, Gothenburg, Sweden:
- Kiruna, Sweden

Research Institute of National Defence, Stockholm, Sweden:
- Upsala, Sweden

Royal Board of Swedish Telegraphs, Radio Department, Stockholm, Sweden:
- Lulea, Sweden

Post, Telephone and Telegraph Administration, Berne, Switzerland:
Schwarzenburg, Switzerland

United States Army Signal Corps:
Adak, Alaska
Okinawa I.
White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):
Anchorage, Alaska
Maui, Hawaii
Panama Canal Zone
Point Barrow, Alaska
Puerto Rico, W. I.
Washington, D. C.

HOURLY IONOSPHERIC DATA AT WASHINGTON, D. C.

The data given in tables 49 through 60 follow the scaling practices given in the report IRPL-C61, "Report of International Radio Propagation Conference," pages 36 to 39, and the median values are determined by the conventions given above under "Symbols, Terminology, Conventions." Beginning with September 1949, the data are taken at Ft. Belvoir, Virginia.

IONOSPHERIC STORMINESS AT WASHINGTON, D.C.

Table 61 presents ionosphere character figures for Washington, D. C., during February 1954, as determined by the criteria given in the report IRPL-R5, "Criteria for Ionospheric Storminess," together with Cheltenham, Maryland, geomagnetic K-figures, which are usually covariant with them.

RADIO PROPAGATION QUALITY FIGURES

Tables 63a and 63b give for January 1954 the radio propagation quality figures for the North Atlantic area, the relevant CRPL advance and short-term forecasts, a summary geomagnetic activity index and sundry comparisons, specifically as follows:

(a) radio propagation quality figures, Qa, separately for each 6-hour interval of the Greenwich day, viz., 00-06, 06-12, 12-18, 18-24 hours UT (Universal Time or GCT).
(b) whole-day radio quality indices (beginning October 1952). Each index is a weighted average of the four quarter-day Qa-figures, before rounding off, with half weight given to quality grades 5 and 6. This procedure tends to give whole-day indices suitable for comparison with whole-day advance forecasts which designate whenever possible the days when significant disturbance or unusually quiet conditions will occur.
(c) short-term forecasts, issued by CRPL every six hours (nominally one hour before 00^h, 06^h, 12^h, 18^h UT) and applicable to the period 1 to 13 (especially 1 to 7) hours ahead. Note that new scoring rules have been adopted beginning with October 1952 data.
(d) advance forecasts, issued semiweekly (CRPL-J reports) and applicable 1 to 3 or 4 days ahead, 4 or 5 to 7 days ahead, and 8 to 25 days ahead. These forecasts are scored against the whole-day quality indices.
(e) half-day averages of the geomagnetic K indices measured by the Cheltenham Magnetic Observatory of the U. S. Coast and Geodetic Survey.
(f) illustration of the comparison of short-term forecasts with Qa-figures and also with estimates of radio quality based on CRPL observations only.
(g) illustration of the outcome of advance forecasts (1 to 3 or 4 days ahead) and, for comparison, the outcome of a type of "blind" forecast. For the latter the frequency for each quality grade, as determined from the distribution of quality grades in the four most recent months of the current season, is partitioned among the grades observed in the current month in proportion to the frequencies observed in the current month.

These radio propagation quality figures, Qa, are prepared from radio traffic data reported to CRPL by American Telephone and Telegraph Company, Mackay Radio and Telegraph Company, RCA Communications, Inc., Marconi Company, British Admiralty Signal and Radar Establishment, and the following agencies of the U. S. Government:--Coast Guard, Navy, Army Signal Corps, and U. S. Information Agency. The method of calculation, summarized below, is similar to that described in a 1946 report, IRPL-R31, now out of print. Only reports of radio transmission on North Atlantic paths closely approximating New York-London are included in the estimation of quality.

The original reports are submitted on various scales and for various time intervals. The observations for each 6-hour interval are averaged on the quality scale of the original reports. These 6-hour indices are then adjusted to the 1 to 9 quality-figure scale by a conversion table prepared by comparing the distribution of these indices for at least four months, usually a year, with a master distribution determined from analysis of the reports originally made on the 1 to 9 quality-figure scale. A report whose distribution is the same as the master is thereby converted linearly to the Q-figure scale. The 6-hourly quality figures are (subjectively) weighted means of the reports received for that period. These 6-hourly quality figures replace, beginning January 1953, the half-daily quality figures which formerly appeared in this table. (These forecasts and quality indices are prepared by the North Atlantic Radio Warning Service, the CRPL forecasting center at Ft. Belvoir, Virginia.)

Table 62 gives for January 1954, the radio propagation quality figures for the North Pacific area, the relevant CRPL advance and short-term forecasts, and sundry comparisons, specifically as follows:

(a) radio propagation quality figures, Qp, separately for each of three 9-hour intervals of the Greenwich day, viz., 03-12, 09-18 and 18-03 UT (Universal Time or GCT).
(b) whole-day radio quality indices for each Greenwich day. These are derived from the same basic data as the 9-hour indices, separately reduced.
(c) short-term forecasts, issued daily at 02, 09 and 18 hours UT.
(d) advance forecasts, issued semiweekly (CRPL-Jp reports) and applicable 1 to 3 or 4 days ahead, 4 or 5 to 7 days ahead, and 8 to 25 days ahead. These forecasts are scored against the whole day quality indices.

These radio quality indices, Qp, refer to radio propagation on optimum frequencies over moderately long transmission paths in the North Pacific area. Typical paths are Anchorage (Alaska) to Seattle, or Anchorage to Tokyo. The indices are derived from reports submitted regularly by communications agencies of the U. S. Army and Air Force, and by Aeronautical Radio, Inc. The method of derivation of Qp differs from that of Qa. For Qp, each reported index is converted into a deviation (usually) from the 3-monthly mean for that index, in units of the standard deviation. These deviations are averaged for all reports for a given 9-hour period. The average is then put on the 1 to 9 Q-scale with an assumed standard deviation of 1.25 and assumed means of 5.33, 5.33, and 6.00, respectively, for the 03-12, 09-18 and 18-03 periods, and 5.67 for the whole day period. (These forecasts and quality indices are prepared by the North Pacific Radio Warning Service, the CRPL forecasting center at Anchorage, Alaska.)

These quality figures are, in effect, a consensus of reported radio propagation conditions. The reasons for low quality are not necessarily known and may not be limited to ionospheric storminess. For instance, low quality may result from improper frequency usage for the path and time of day. Although, wherever it is reported, frequency usage is included in the rating of reports, it must often be an assumption that the reports refer to optimum working frequencies. It is more difficult to eliminate from the indices conditions of low quality because of multipath, interference, etc. These considerations should be taken into account in interpreting research correlations between the Q-figures and solar, auroral, geomagnetic or similar indices.

OBSERVATIONS OF THE SOLAR CORONA

Tables 64 through 66 give the observations of the solar corona during February 1954, obtained at Climax, Colorado, by the High Altitude Observatory of Harvard University and the University of Colorado. Tables 67 through 69 list the coronal observations obtained at Sacramento Peak, New Mexico, during February 1954, derived by Harvard College Observatory as a part of its performance of a research contract with the Upper Air Research Observatory, Geophysical Research Directorate, Air Force Cambridge Research Center. The data are listed separately for east and west limbs at 5-degree intervals of position angle north and south of the Solar Equator at the limb. The time of observation is given to the nearest tenth of a day, GCT.

Table 64 gives the intensities of the green (5303A) line of the emission spectrum of the solar corona; table 65 gives similarly the intensities of the first red (6374A) coronal line; and table 66, the intensities of the second red (6702A) coronal line; all observed at Climax in February 1954.

Table 67 gives the intensities of the green (5303A) coronal line; table 68, the intensities of the first red (6374A) coronal line; and table 69, the intensities of the second red (6702A) coronal line; all observed at Sacramento Peak in February 1954.

The following symbols are used in tables 64 through 69: a, observation of low weight; -, corona not visible; and X, position angle not included in plate estimates.

RELATIVE SUNSPOT NUMBERS

Table 70 lists the daily provisional Zürich relative sunspot number, R_Z, for February 1954, as communicated by the Swiss Federal Observatory. Table 71 contains the daily American relative sunspot number, R_A', for January and February 1954, as compiled by the Solar Division, American Association of Variable Star Observers.

OBSERVATIONS OF SOLAR FLARES

Table 72 gives the preliminary record of solar flares reported to the CRPL. These reports are communicated on a rapid schedule at the sacrifice of detailed accuracy. Definitive and complete records are published later in the Quarterly Bulletin of Solar Activity, I.A.U., in various observatory publications, and elsewhere. The present listing serves to identify and roughly describe the phenomena observed. Details should be sought from the reporting observatory.

Reporting directly to the CRPL are the following observatories: Mt. Wilson, McMath-Hulbert, U. S. Naval, Wendelstein, Kanzel and High Altitude at Sacramento Peak, New Mexico. The remainder report to Meudon (Paris) and the data are taken from the Paris-URSIgram broadcast, monitored fairly regularly by the CRPL. The data on solar flares reported from Sacramento Peak, New Mexico, communicated by the High Altitude Observatory at Boulder, Colorado, are provided by Harvard University as the result of work undertaken on an Air Materiel Command Research and Development Contract administered by the Air Force Cambridge Research Laboratories.

The table lists for each flare the reporting observatory, date, times of beginning and ending of observation, duration (when known), total area (corrected for foreshortening), and heliographic coordinates. For the maximum phase of the flare is given the time, intensity, area relative to the total area, and the importance. The column "SID observed" is to indicate when a sudden ionosphere disturbance, noted elsewhere in these reports, occurred at the time of a flare. Times are in Universal Time (GCT).

INDICES OF GEOMAGNETIC ACTIVITY

Table 73 lists various indices of geomagnetic activity based on data from magnetic observatories widely distributed throughout the world. The indices are: (1) preliminary international character-figures, C; (2) geomagnetic planetary three-hour-range indices, Kp; (3) magnetically selected quiet and disturbed days.

The C-figure is the arithmetic mean of the subjective classification by all observatories of each day's magnetic activity on a scale of 0 (quiet) to 2 (storm). The magnetically quiet and disturbed days are selected by the international scheme outlined on pages 219-227 in the December 1943 issue of Terrestrial Magnetism and Atmospheric Electricity. The details of the currently used method follow. For each day of a month, its geomagnetic activity is assigned by weighting equally the following three criteria: (1) the sum of the eight Kp's; (2) the greatest Kp; and (3) the sum of the squares of the eight Kp's.

Kp is the mean standardized K-index from 11 observatories between geomagnetic latitudes 47 and 63 degrees. The scale is 0 (very quiet) to 9 (extremely disturbed), expressed in thirds of a unit, e.g., 5- is 4 2/3, 5o is 5 0/3, and 5+ is 5 1/3. This planetary index is designed to measure solar particle-radiation by its magnetic effects, specifically to meet the needs of research workers in the ionospheric field. A complete description of Kp has appeared in Bulletin 12b, "Geomagnetic Indices C and K, 1948," published in Washington, D. C., 1949, by the Association of Terrestrial Magnetism and Electricity, International Union of Geodesy and Geophysics. Kp is available from 1937 to date as noted in F108.

The Committee on Characterization of Magnetic Disturbance, ATME, IUGG, has kindly supplied this table. The Meteorological Office, De Bilt, Holland, collects the data and compiles C and selected days. The Chairman of the Committee computes the planetary index. Current tables are also published quarterly in the Journal of Geophysical Research along with data on sudden commencements (sc) and solar flare effects (sfe).

SUDDEN IONOSPHERE DISTURBANCES

Table 74 shows that no sudden ionosphere disturbances were observed at Ft. Belvoir, Virginia, during the month of February 1954. Table 75 lists the sudden ionosphere disturbances observed at Point Reyes, California, December 1953.

TABLES OF IONOSPHERIC DATA

Table 1

Washington, D. C. (38.7°N, 77.1°W) February 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(280)	2.1						3.1
01	(270)	(2.3)						(3.1)
02	260	2.4						3.1
03	270	(2.7)						(3.1)
04	260	(2.8)						3.1
05	250	2.6						3.2
06	240	(2.6)						(3.3)
07	230	3.1	---	---	---	---		3.4
08	230	4.5	220	---	120	1.9		3.5
09	240	4.8	210	(3.5)	110	2.4	2.8	3.5
10	270	5.1	200	3.7	110	2.6		3.4
11	280	5.6	200	3.9	110	2.8		3.3
12	280	5.7	200	3.9	110	2.9		3.4
13	280	5.6	200	3.9	110	2.8		3.3
14	280	5.6	220	3.9	110	2.7		3.4
15	270	5.6	220	3.6	110	2.6		3.4
16	260	5.4	230	3.4	120	2.3		3.4
17	230	5.2	220	---	130	1.9	1.9	3.5
18	220	4.5						3.4
19	240	3.4						3.2
20	(250)	2.9						3.2
21	(260)	2.4						3.2
22	(270)	2.4						3.1
23	(270)	2.2						3.1

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 2

Anchorage, Alaska (61.2°N, 149.9°W) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(300)	(2.6)					2.5	(3.0)
01	<320	1.3					2.2	3.0
02	<350	1.8					2.8	3.0
03	320	2.2					2.8	(2.9)
04	340	1.9					1.9	2.9
05	330	1.8					3.0	2.8
06	(320)	(1.9)					2.9	---
07	(310)	(2.0)					2.1	(3.0)
08	280	2.0						3.0
09	240	3.3			120	1.6	1.6	3.3
10	240	4.2	230	---	110	(1.7)		3.4
11	240	4.7	230	2.2	110	1.8		3.4
12	240	5.0	220	2.0	110	1.8		3.5
13	230	5.0	230	---	110	1.8		3.5
14	230	5.0	230	---	120	1.7		3.5
15	220	4.3	---	---	130	1.6		3.5
16	220	3.9						3.4
17	230	3.0						3.3
18	250	2.3						3.2
19	260	1.7						3.3
20	---	---						---
21	---	---					2.8	---
22	---	---					2.8	---
23	---	---					3.3	---

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 3

Oslo, Norway (60.0°N, 11.1°E) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(270)	(1.6)						(3.1)
01	280	1.4						3.0
02	270	1.4						3.0
03	260	1.4						3.1
04	(270)	1.4						3.0
05	(265)	1.4						3.1
06	(270)	1.4						(3.2)
07	---	(1.4)						(3.2)
08	250	1.8			---	---		3.1
09	220	3.4			---	---	3.0	3.4
10	215	4.3	---	---	---	---	3.0	3.6
11	225	4.8	225	---	---	2.0	3.0	3.6
12	220	5.1	225	---	---	2.0	3.0	3.6
13	220	5.3	225	---	---	2.0	3.0	3.6
14	220	4.9	225	---	---	1.9	2.4	3.6
15	215	4.6			---	---		3.6
16	215	4.0			---	---	1.4	3.5
17	215	3.4						3.4
18	230	2.2						3.4
19	(245)	2.0						3.2
20	---	(1.8)						(3.1)
21	---	1.8						(3.1)
22	---	1.6						---
23	---	1.7						(3.1)

Time: 15.0°E.
Sweep: 0.6 Mc to 14.0 Mc in 8 minutes, automatic operation.

Table 4

Upsala, Sweden (59.8°N, 17.6°E) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	2.0						2.9
01	290	2.0						(2.9)
02	295	2.0						2.9
03	285	2.0						3.0
04	295	1.8					2.2	2.9
05	(280)	1.5					2.2	(2.9)
06	(275)	1.5					2.2	(3.0)
07	---	1.5					2.0	(2.9)
08	240	2.2			---	E		3.2
09	220	3.8			120	1.6	2.2	3.4
10	220	4.5	225	(2.4)	120	1.7	1.9	3.5
11	220	4.9	220	2.7	---	1.9	2.1	3.5
12	220	5.1	220	2.7	---	2.0	1.9	3.5
13	225	5.2	220	2.5	---	1.9		3.5
14	220	4.8	220	2.4	130	1.7		3.5
15	215	4.3			---	E	1.8	3.5
16	215	3.7			---	E	1.8	3.3
17	220	2.8			---	---		3.3
18	240	2.1						3.2
19	260	2.0						3.0
20	(300)	1.9						(2.8)
21	290	(1.9)						(2.9)
22	(285)	(2.0)						(2.9)
23	(300)	(2.0)						(2.9)

Time: 15.0°E.
Sweep: 1.4 Mc to 17.0 Mc in 6 minutes.

Table 5

Graz, Austria (47.1°N, 15.5°E) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	2.9						
01	280	3.0						
02	280	3.0						
03	280	2.9						
04	280	2.8						
05	240	2.9						
06	250	2.2						
07	245	2.2						
08	200	3.8						
09	200	5.0						
10	200	5.2						
11	220	5.3						
12	210	5.8						
13	215	5.0						
14	210	5.0						
15	200	5.0						
16	200	4.8						
17	210	3.9						
18	240	3.2						
19	240	2.9						
20	250	2.9						
21	300	2.8						
22	280	3.0						
23	280	3.0						

Time: 15.0°E.
Sweep: 2.5 Mc to 12.0 Mc in 2 minutes.

Table 6

White Sands, New Mexico (32.3°N, 106.5°W) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.1						3.0
01	270	3.2						3.0
02	260	3.2						3.1
03	250	3.1						3.1
04	240	3.2						3.3
05	240	2.9						3.2
06	270	2.8						3.1
07	230	3.5	---	---	---	---		3.4
08	230	4.9	220	---	120	1.9	2.7	3.6
09	250	4.9	220	3.3	120	2.4	3.2	3.5
10	270	5.4	220	3.8	110	2.7	3.4	3.5
11	280	5.8	220	4.0	110	2.9	3.1	3.3
12	270	6.4	210	4.0	110	3.0	3.7	3.4
13	270	6.0	220	4.0	110	2.9	3.4	3.4
14	250	5.8	210	3.9	110	2.8	3.3	3.5
15	250	5.7	220	3.7	110	2.6	3.6	3.5
16	230	5.4	220	---	110	2.2	3.2	3.5
17	220	4.8						3.5
18	230	3.5					2.5	3.4
19	240	2.9					3.1	3.4
20	240	2.8						3.4
21	250	2.5						3.2
22	280	2.7						3.0
23	280	3.0						3.0

Time: 105.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 7

Okinawa I. (26.3°N, 127.8°E) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.7						3.0
01	270	2.8						(3.2)
02	250	3.1						(3.5)
03	220	2.9						(3.6)
04	220	2.3						(3.8)
05	—	—						—
06	—	—						—
07	240	3.7			—	—		3.6
08	250	5.4	230	—	110	—	3.0	3.6
09	260	6.3	220	3.9	110	—	3.7	3.6
10	250	7.3	210	4.0	110	2.9	4.3	3.5
11	260	8.0	200	4.2	110	—	4.3	3.4
12	250	9.4	200	4.2	110	3.1	4.0	3.4
13	250	9.5	200	4.1	110	3.1	4.0	3.5
14	240	8.0	210	4.0	110	—	3.9	3.5
15	240	6.6	200	3.8	110	2.7	3.6	3.6
16	230	5.4	210	—	—	—	3.3	3.6
17	220	5.2					3.0	3.7
18	210	3.9					3.2	3.6
19	240	3.4						3.3
20	240	3.7						3.5
21	250	3.3						3.4
22	(240)	3.2						(3.4)
23	(300)	2.8						(3.2)

Time: 127.5°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 8

Maui, Hawaii (20.8°N, 156.5°W) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	(2.5)					2.4	3.0
01	280	(2.7)					2.2	(3.1)
02	240	(3.0)					2.1	(3.4)
03	240	2.5					3.0	3.6
04	240	2.1					2.7	3.6
05	280	1.8					2.8	3.3
06	300	1.6					3.8	3.0
07	270	2.9			---	---	3.3	3.1
08	250	5.2	250	---	120	2.0	3.8	3.4
09	290	6.3	240	4.0	120	2.5	4.9	3.3
10	290	7.5	230	4.1	120	2.9	5.5	3.2
11	290	8.0	220	4.3	120	3.0	5.2	3.2
12	320	8.2	200	4.4	120	3.1	4.8	3.0
13	300	9.0	210	4.3	120	3.1	5.4	3.0
14	280	9.4	220	4.2	120	3.0	4.9	3.2
15	270	9.1	230	4.1	120	2.9	4.5	3.2
16	260	7.3	240	3.7	120	2.6	5.3	3.4
17	240	6.0	240	---	120	2.0	4.4	3.5
18	220	4.7			---	---	5.0	3.6
19	220	3.4					4.1	3.6
20	(270)	2.7					4.0	3.0
21	270	3.2					3.9	3.2
22	260	2.7					3.2	3.3
23	270	2.7					2.5	3.2

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 9

Puerto Rico, W.I. (18.5°N, 67.2°W) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.8						3.0
01	260	4.0						3.1
02	230	4.2						3.2
03	220	4.3						3.3
04	230	3.8						(3.2)
05	260	3.2						3.0
06	240	3.2						3.2
07	230	3.8						3.4
08	230	5.1	220	---	110	2.0	2.1	3.6
09	250	5.5	230	---	110	2.6	3.1	3.6
10	260	5.9	220	4.0	110	2.9	3.2	3.6
11	260	5.9	210	4.2	110	3.0	3.9	3.6
12	280	5.8	200	4.2	110	3.1	4.0	3.4
13	290	5.9	200	4.2	110	3.2	4.1	3.3
14	280	6.5	220	4.2	110	3.1	3.7	3.4
15	270	6.2	230	4.0	110	2.9	3.8	3.4
16	260	5.9	220	3.9	110	2.6	3.6	3.4
17	240	5.7	220	---	110	2.1	3.2	3.5
18	220	5.4					2.9	3.6
19	210	4.2					2.8	3.6
20	240	3.0					2.5	3.3
21	270	3.2					2.2	3.0
22	260	3.7						3.1
23	250	3.8						3.1

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 10

Panama Canal Zone (9.4°N, 79.9°W) January 1954

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	3.0					2.5	3.1
01	240	3.2					2.6	3.3
02	230	3.3					2.8	3.4
03	210	2.6					2.8	3.6
04	240	2.2					2.5	3.2
05	270	2.3					2.8	3.2
06	260	2.4					2.4	3.2
07	240	4.2	---	---	---	(1.7)	2.1	3.5
08	260	5.4	240	---	110	(2.3)	3.4	3.5
09	270	6.0	230	4.0	110	2.8	3.6	3.4
10	280	6.8	210	4.2	110	3.0	4.2	3.3
11	280	6.6	200	4.3	110	3.2	3.9	3.4
12	310	6.8	200	4.3	110	3.3	4.7	3.1
13	320	6.8	210	4.2	110	3.2	4.7	3.1
14	310	7.9	220	4.2	110	3.1	4.8	3.1
15	280	7.8	220	4.2	110	3.0	5.2	3.3
16	270	7.6	230	4.0	110	2.7	5.2	3.4
17	240	7.1	220	(3.5)	110	2.2	4.3	3.6
18	220	5.5					3.8	3.7
19	220	3.8					3.9	3.6
20	230	3.0					3.2	3.4
21	270	2.6					2.9	3.1
22	290	2.6					2.6	3.0
23	280	3.0					2.4	3.0

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 11

Resolute Bay, Canada (74.7°N, 94.9°W) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	2.6					2.7	3.2
01	250	2.5					3.5	3.2
02	250	2.3					3.0	3.2
03	260	2.0					3.1	3.3
04	260	2.2					3.2	3.2
05	250	2.4					3.1	3.3
06	280	2.4					3.7	3.3
07	290	2.2					3.8	3.1
08	260	2.8					4.4	3.2
09	260	2.9					4.4	3.1
10	250	3.0					3.8	3.2
11	250	3.0					3.8	3.2
12	240	3.2					3.4	3.2
13	240	3.0					3.9	3.2
14	240	3.0					3.0	3.2
15	240	3.0						3.2
16	240	3.0						3.2
17	250	3.0						3.2
18	250	3.0						3.2
19	250	2.8						3.2
20	250	2.9					1.9	3.2
21	250	2.8					3.0	3.2
22	250	2.6						3.2
23	250	2.7						3.2

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 12

Point Barrow, Alaska (71.3°N, 156.8°W) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	(2.5)					5.4	---
01	300	(2.5)					5.0	---
02	270	2.4					5.2	(3.4)
03	(260)	(2.6)					4.5	(3.4)
04	280	(2.9)					4.5	(3.4)
05	(310)	(3.0)					4.6	(3.2)
06	(340)	(3.5)					4.5	(3.1)
07	(300)	(3.2)					4.7	(3.3)
08	---	---					4.5	---
09	(380)	(2.5)					4.5	(3.1)
10	300	2.6					4.2	3.2
11	280	2.6					3.4	3.3
12	260	3.1					3.0	3.4
13	250	3.4					2.3	3.4
14	250	3.3					2.6	3.4
15	260	3.0					2.3	3.4
16	260	2.5					2.4	3.4
17	300	2.0					2.4	3.3
18	(270)	(1.5)					3.5	---
19	(350)	(3.0)					3.4	---
20	(330)	(3.0)					3.5	(3.0)
21	(300)	(2.7)					4.1	(3.3)
22	(300)	(2.7)					4.3	(3.3)
23	---	---					5.2	---

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 13

Kiruna, Sweden (67.8°N, 20.3°E) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(345)	(2.6)					4.0	(3.2)
01	335	2.8					2.4	3.2
02	300	2.6					2.1	3.1
03	300	2.4					1.8	3.2
04	280	2.1						3.0
05	(290)	(2.2)						(3.1)
06	---	---					(4.2)	---
07	---	---					(4.0)	---
08	---	---					2.6	---
09	250	2.8					1.8	3.2
10	230	3.7					1.6	3.5
11	220	4.0						3.5
12	210	4.1						3.5
13	210	3.9						3.5
14	220	3.2						3.4
15	250	2.5						3.5
16	275	2.2						3.5
17	---	---					(2.8)	---
18	---	---					3.8	---
19	(260)	---					4.0	---
20	---	---					4.6	---
21	(300)	(3.4)					4.2	(3.2)
22	(300)	(3.6)					3.9	(3.0)
23	(320)	(3.1)					4.2	(3.2)

Time: 15.0°E.
Sweep: 0.8 Mc to 15.0 Mc in 30 seconds.

Table 14

Lulea, Sweden (65.6°N, 22.1°E) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	(2.2)					3.0	
01								
02	290	2.2					3.0	
03								
04	300	(2.0)					2.8	
05								
06	---	(2.3)					2.5	
07								
08	290	(2.2)						
09								
10	220	3.7			---	---	2.9	
11								
12	215	4.4	---	---	---	1.6	2.1	
13								
14	210	3.4					2.7	
15								
16	245	2.3						
17								
18	---	---					3.1	
19								
20	---	---					3.0	
21								
22	(305)	---						
23								

Time: 15.0°E.
Sweep: 1.5 Mc to 10.0 Mc in 6 minutes.

Table 15

Churchill, Canada (58.8°N, 94.2°W) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(310)	(2.6)			---	---	6.0	---
01	---	---			---	---	6.7	---
02	---	(2.8)			---	---	5.0	---
03	---	<3.0			---	---	5.0	---
04	---	---			---	---	4.3	---
05	---	(4.0)			---	---	4.6	---
06	---	---			---	---	5.0	---
07	---	---			---	---	4.5	---
08	---	---			---	2.0	4.5	---
09	260	3.3			(120)	1.9	4.5	3.4
10	250	4.2			120	1.9	3.2	3.4
11	240	4.7	---	---	120	2.1	3.3	3.4
12	240	5.0	230	---	110	2.2		3.4
13	240	5.1	210	---	110	2.1		3.4
14	240	5.3	---	---	120	2.0		3.4
15	240	5.3			120	1.8		3.4
16	240	4.9			120	(2.0)		3.3
17	280	4.0			120	2.5	3.9	3.2
18	320	3.1			120	2.3	4.0	3.2
19	320	3.0			120	2.5	4.0	3.1
20	320	3.0			120	2.6	4.0	3.2
21	(300)	2.9			110	2.6	4.0	(3.3)
22	(320)	(3.0)			---	---	5.0	---
23	(290)	(2.8)			---	---	5.0	---

Time: 90.0°W.
Sweep: 0.6 Mc to 10.0 Mc in 16 seconds.

Table 16

Fort Chimo, Canada (58.1°N, 68.3°W) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	<2.3			120	(2.3)	5.0	
01	---	(2.4)			100	3.4	4.3	
02	---	<2.4			100	3.0	3.7	
03	---	<3.0			100	3.2	4.0	
04	---	---			100	3.3	4.0	
05	---	<2.4			100	3.2	3.9	---
06	---	---			100	3.0	3.2	---
07	---	<1.9			100	2.4	2.5	---
08	240	<3.1			100	1.8	1.8	3.4
09	230	4.0	---	---	100	1.8		3.5
10	240	4.6	---	---	120	2.0		3.4
11	230	5.0	200	---	110	2.1		3.5
12	240	5.2	220	---	120	2.2		3.5
13	240	5.3	220	---	120	2.2		3.4
14	240	5.4	---	---	120	2.0		3.4
15	230	4.8			110	2.3		---
16	250	3.4			110	2.8		---
17	300	<2.8			100	2.6	2.5	---
18	(260)	2.9			110	3.1		
19	(340)	<2.8			100	3.1	4.2	
20	(250)	2.8			110	2.8	4.3	
21	(290)	<2.4			110	2.7	6.1	
22	---	---			100	3.2	5.0	
23	---	---			100	3.3	5.5	

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 17

Prince Rupert, Canada (54.3°N, 130.3°W) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	1.5					4.0	---
01	260	1.4					4.1	---
02	290	1.4					4.0	---
03	300	1.4					4.6	---
04	300	1.3					5.0	---
05	300	1.4					5.0	---
06	300	1.6					4.2	---
07	300	1.8					5.0	---
08	270	1.9					4.0	---
09	240	3.4			---	1.4	3.3	3.5
10	230	4.4	---	---	120	1.9	2.5	3.5
11	230	5.1	230	---	120	2.1		3.5
12	230	5.3	220	---	120	2.2		3.4
13	230	5.7	220	---	120	2.2		3.5
14	230	5.5	220	---	120	2.1	1.6	3.5
15	230	5.4	---	---	130	2.0		3.4
16	220	4.5			140	1.6		3.4
17	220	3.7					2.0	3.4
18	230	2.6						3.4
19	240	1.9					3.0	---
20	230	1.7					3.7	---
21	---	---					4.0	
22	---	---					4.1	
23	---	---					4.0	

Time: 120.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 15 seconds.

Table 18

De Bilt, Holland (52.1°N, 5.2°E) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.0						3.2
01	260	3.0						3.1
02	260	2.8						3.2
03	260	2.5						3.1
04	250	2.2						(3.2)
05	235	2.1						3.3
06	240	1.8						(3.3)
07	240	2.3			---	E		3.3
08	210	4.0			---	1.6		3.6
09	210	4.9	---	---	120	1.9		3.7
10	220	5.3	220	2.9	120	2.1		3.7
11	230	5.6	220	3.2	120	2.3		3.7
12	220	5.5	220	3.2	120	2.3		3.6
13	220	5.4	220	3.0	120	2.2		3.7
14	220	5.3	---	---	130	2.0		3.7
15	220	4.8			---	1.8		3.6
16	210	3.9			---	E	2.0	3.5
17	225	3.1						3.4
18	235	2.5						3.3
19	250	2.4						3.2
20	240	2.6						3.2
21	240	2.6						3.2
22	<260	2.7						3.1
23	<260	3.0						3.1

Time: 0.0°.
Sweep: 1.4 Mc to 11.2 Mc in 6 minutes, automatic operation.

Table 19

Adak, Alaska (51.9°N, 176.6°W) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	2.8					2.3	2.9
01	300	2.8					1.7	2.9
02	300	2.8					2.3	2.8
03	300	2.8						2.9
04	300	2.8					2.2	2.8
05	280	3.0					2.3	3.0
06	260	2.8					3.0	3.1
07	270	2.5					2.8	3.1
08	250	4.0					3.3	3.4
09	250	5.1	260	---	120	1.8	2.1	3.4
10	250	5.4	250	---	130	2.1		3.3
11	260	5.7	250	---	120	2.3		3.3
12	260	5.7	250	---	120	2.3		3.4
13	260	5.7	250	---	120	2.1		3.4
14	250	5.5	250	---	130	2.0		3.4
15	250	4.7			---	---	1.5	3.4
16	240	3.8					1.5	3.2
17	260	2.6					2.7	3.2
18	270	2.4					2.6	3.2
19	270	2.4					2.7	3.3
20	260	2.4					2.7	3.2
21	280	2.3					2.8	2.9
22	300	2.6					2.1	2.9
23	300	2.9					2.4	2.9

Time: 180.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 20

Lindau/Harz, Germany (51.6°N, 10.1°E) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.2					2.2	3.2
01	250	3.1					2.3	3.2
02	240	2.9					2.3	3.2
03	250	2.6					2.2	3.2
04	240	2.4					2.3	3.3
05	240	2.2					2.3	3.4
06	240	2.0					2.2	3.5
07	250	1.8					2.2	3.4
08	220	3.2					2.2	3.5
09	210	4.6			—	E	2.4	3.8
10	215	5.3			120	2.0	2.8	3.8
11	215	5.6			115	2.2	2.9	3.7
12	215	5.4			115	2.2	3.1	3.7
13	215	5.5			115	2.2	3.0	3.8
14	220	5.3			120	2.1	3.2	3.7
15	215	5.2			130	1.8	3.1	3.7
16	210	4.4					2.6	3.7
17	210	3.5					2.5	3.6
18	225	2.8					2.4	3.5
19	250	2.4					2.3	3.4
20	250	2.6					2.2	3.3
21	250	2.6					2.3	3.3
22	250	2.7					2.3	3.3
23	260	3.0					2.2	3.2

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 8 minutes.

Table 21

Winnipeg, Canada (49.9°N, 97.4°W) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	370	(2.3)					3.3	—
01	390	(2.4)					3.2	—
02	390	(2.5)					3.5	(2.9)
03	(380)	(2.4)					4.0	—
04	(380)	(2.3)					4.2	—
05	(340)	(2.5)					4.0	—
06	—	—					4.1	—
07	(300)	(2.3)					3.7	(3.1)
08	260	2.5					2.4	3.1
09	230	3.9	210	—	140	1.8		3.4
10	230	4.8	220	—	120	2.1		3.4
11	250	5.3	220	3.4	120	2.3		3.4
12	250	5.7	220	3.5	120	2.4		3.4
13	240	5.8	220	3.4	120	2.4		3.4
14	240	5.7	220	—	120	2.3		2.4
15	230	5.5	230	—	120	2.1		3.4
16	220	5.1	---	—	140	1.8		3.4
17	220	4.4						3.3
18	230	3.4						3.3
19	260	2.3						3.2
20	280	1.9						3.2
21	(360)	1.8					3.1	—
22	(500)	1.8					3.1	—
23	400	2.3						

Time: 90.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 16 seconds.

Table 22

St. John's, Newfoundland (47.6°N, 52.7°W) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	1.8					2.6	3.0
01	300	1.8					2.8	3.0
02	300	1.9					2.8	3.0
03	290	1.9					2.8	3.1
04	270	1.8					3.6	3.2
05	250	1.7					3.8	3.3
06	280	1.7					3.4	3.3
07	230	2.6	—	—	—	E	3.0	3.5
08	220	4.3	220	—	130	1.9	2.8	3.6
09	240	4.9	220	3.0	130	2.3	2.6	3.6
10	240	5.4	220	3.5	130	2.5		3.7
11	240	5.8	210	3.5	120	2.6		3.7
12	240	5.7	200	3.5	130	2.6		3.7
13	240	5.6	210	3.4	130	2.5		3.7
14	240	5.4	230	3.0	130	2.3	2.0	3.6
15	230	5.3	230	—	150	1.9	2.1	3.6
16	230	4.8			—	E	2.0	3.5
17	230	3.5						3.4
18	250	2.7						3.2
19	290	2.0						3.1
20	300	1.8					2.4	3.0
21	300	1.8						3.1
22	310	1.7						3.0
23	(350)	1.8					2.4	(3.1)

Time: 60.0°W.
Sweep: 0.8 Mc to 10.0 Mc in 18 seconds.

Table 23

Schwarzenburg, Switzerland (46.8°N, 7.3°E) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	3.1						3.5
01	230	3.0						3.5
02	240	3.0						3.5
03	250	3.0						3.5
04	230	2.8						3.6
05	200	2.6						3.8
06	200	2.4						3.9
07	200	2.3						3.8
08	200	3.4			---	---		4.0
09	200	4.6			100	2.0		4.0
10	200	5.4			100	2.2		4.0
11	200	5.6			100	2.4		4.0
12	200	5.5			100	2.4		4.0
13	200	5.6			100	2.5		4.0
14	200	5.4			100	2.3		4.0
15	200	4.9			100	2.2		4.0
16	200	4.7						4.0
17	200	4.0						4.0
18	200	3.0						3.8
19	200	2.8						3.7
20	210	2.8						3.6
21	200	3.0						3.8
22	220	3.0						3.6
23	250	3.0						3.5

Time: 15.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 24

Ottawa, Canada (45.4°N, 75.9°W) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	370	2.3					2.4	(3.0)
01	330	2.2					2.3	(3.1)
02	320	2.0					3.0	(3.1)
03	300	2.1					2.7	(3.0)
04	300	2.2					2.7	(3.2)
05	280	2.2					2.5	3.2
06	300	2.1					2.6	3.2
07	290	2.2					2.4	3.2
08	230	3.8	---	---	150	1.8	2.0	3.4
09	230	5.0	220	---	130	2.2		3.5
10	240	5.3	220	3.4	120	2.5		3.4
11	250	5.9	220	3.6	120	2.6		3.4
12	250	6.0	220	3.7	120	2.7		3.5
13	250	5.9	210	3.5	120	2.6		3.4
14	250	5.8	220	3.2	120	2.5		3.4
15	230	5.6	230	2.7	130	2.1		3.5
16	230	5.2	---	---	---	1.8		3.4
17	220	4.3						3.4
18	240	3.3						3.3
19	260	2.5						3.2
20	290	2.2						3.2
21	330	2.0						(3.1)
22	(330)	2.0					3.1	(3.1)
23	(360)	2.0					2.4	---

Time: 75.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 15 seconds.

Table 25

Formosa, China (25.0°N, 121.5°E) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.7						2.8
01	290	2.7						2.9
02	270	3.0						3.0
03	260	3.0						3.2
04	240	2.8						3.0
05	260	2.4					1.6	3.2
06	260	2.1					2.1	3.0
07	230	4.4			(160)	(1.6)	2.0	3.5
08	240	5.5	230	3.4	120	2.3		3.4
09	260	6.0	240	3.9	120	2.7		3.5
10	280	6.6	220	4.1	120	(2.9)	3.4	3.3
11	280	6.8	220	4.2	120	3.1	4.1	3.4
12	280	8.3	230	4.2	110	3.1	3.9	3.2
13	280	9.1	230	4.2	110	3.1	4.1	3.4
14	260	9.3	240	4.1	120	3.1	4.3	3.4
15	240	8.2	220	3.7	110	2.6	4.5	3.5
16	240	6.7	---	---	110	2.2	3.8	3.5
17	220	6.2			---	---	4.2	3.6
18	220	4.6					3.9	3.5
19	240	4.0					3.2	3.3
20	240	3.7					2.5	3.0
21	270	3.6					2.3	3.3
22	240	3.2					2.1	3.2
23	240	3.0					1.8	3.1

Time: 120.0°E.
Sweep: 1.1 Mc to 19.5 Mc in 15 minutes, manual operation.

Table 26

Leopoldville, Belgian Congo (4.3°S, 15.3°E) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M2000)F2
00	250	5.0						2.3
01	240	4.6						2.4
02	240	4.1						2.4
03	240	3.8						2.5
04	240	3.0					1.5	2.4
05	240	4.0	---	---	130	1.7	2.2	2.6
06	285	5.4	230	---	115	2.3	2.8	2.5
07	330	6.0	220	4.1	110	2.8	2.9	2.4
08	350	7.0	220	4.2	110	3.0	2.6	2.1
09	360	8.0	210	4.3	110	3.2	3.2	2.1
10	360	8.6	210	4.3	110	3.4	3.3	2.1
11	385	8.7	200	4.4	110	3.4	3.6	2.1
12	360	9.1	195	4.4	110	3.4	3.5	2.1
13	365	9.1	200	4.2	110	3.3	3.5	2.1
14	360	9.0	220	4.1	110	3.0	3.2	2.1
15	340	9.0	220	4.0	115	2.7	3.0	2.1
16	330	8.7	240	3.8	120	2.1	3.0	2.1
17	270	9.0	275	---	---	---	3.0	2.2
18	260	8.5					2.8	2.2
19	265	8.0					2.0	2.2
20	260	8.1						2.3
21	240	8.3						2.5
22	220	7.6						2.6
23	230	6.0						2.4

Time: 0.0°.
Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 27

Watheroo, W. Australia (30.3°S, 115.9°E) December 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(270)	3.8					3.6	3.0
01	255	3.7					4.0	3.1
02	250	3.5					4.0	3.2
03	250	3.3					3.6	3.1
04	260	3.2					3.6	3.0
05	260	3.4	---	---		1.2	2.9	3.1
06	250	(4.0)	250	3.2		2.0	3.0	(3.3)
07	---	---	250	3.7		2.5	3.1	---
08	---	5.4	250	4.2		2.9	4.0	3.1
09	(330)	5.4	250	4.3		3.2	4.3	3.0
10	(350)	5.9	---	4.5		3.3	6.0	2.9
11	(350)	6.4	---	4.5		3.4	6.4	2.9
12	345	6.4	---	4.6		3.4	6.4	3.0
13	320	6.8	---	4.6		3.4	6.0	3.0
14	320	7.0	---	4.5		3.3	5.5	3.0
15	330	6.8	---	4.4		3.2	4.3	3.0
16	310	6.6	235	4.2		3.0	4.1	3.1
17	300	6.4	240	3.9		2.6	4.2	3.1
18	295	6.3	250	3.4		2.1	4.1	3.1
19	250	6.4	---	---		---	3.5	3.1
20	250	(6.2)					3.9	(3.1)
21	250	5.4					3.3	(3.1)
22	270	3.9					3.0	3.1
23	270	4.1					3.4	3.0

Time: 120.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 2 minutes.

Table 28

Resolute Bay, Canada (74.7°N, 94.9°W) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	2.0						3.1
01	270	2.0						3.2
02	260	2.1					3.4	3.1
03	270	2.1					3.0	3.1
04	270	2.0					3.0	3.2
05	270	2.0					1.6	3.2
06	290	2.1					3.1	3.1
07	260	2.5					3.1	3.2
08	270	2.7					3.7	3.1
09	250	3.0			---	---	3.7	3.1
10	250	3.0			110	1.1	3.5	3.1
11	260	3.1			100	1.4	3.4	3.2
12	250	3.5			110	1.3	2.9	3.2
13	260	3.8			110	1.4	2.5	3.2
14	250	3.2			---	---	2.1	3.2
15	250	3.2			---	---	1.3	3.2
16	250	3.2					1.6	3.1
17	250	3.3						3.1
18	250	3.0					1.8	3.1
19	250	3.0					2.1	3.2
20	260	2.9					1.6	3.2
21	260	2.3						3.1
22	250	2.4						3.2
23	250	2.3						3.2

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 29

Baker Lake, Canada (64.3°N, 96.0°W) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	2.0					6.4	2.9
01	260	2.2			---	---	6.0	3.0
02	280	2.0			---	---	6.0	(2.8)
03	270	2.0			---	---	4.2	(2.9)
04	250	1.8			---	---	4.0	(3.0)
05	250	2.0			---	---	4.0	(2.9)
06	290	2.4			---	---	5.4	(3.0)
07	260	2.8			120	2.0	5.0	(3.0)
08	280	3.1			130	2.2	5.0	(3.0)
09	280	3.4			100	2.5	3.8	3.0
10	260	3.8			100	2.6	3.9	3.0
11	280	4.1	---	---	100	2.7	2.0	3.0
12	260	4.6	---	---	110	2.4		3.0
13	270	4.8	---	---	120	2.4		3.0
14	260	4.5	---	---	120	2.3		3.0
15	250	4.0	---	---	120	2.1		3.0
16	260	3.8	---	---	110	2.0	3.6	2.9
17	260	3.4	---	---	120	2.2	6.0	2.8
18	270	(3.2)	---	---	120	1.9	5.9	(2.8)
19	250	3.2			---	1.8	6.0	(2.9)
20	250	2.8			---	---	6.0	2.9
21	270	2.6			---	---	6.6	(2.9)
22	250	2.5			---	---	8.0	(2.9)
23	250	2.2					6.2	2.9

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 30

Churchill, Canada (58.8°N, 94.2°W) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	2.8			130	2.2	9.0	---
01	(300)	2.8			100	3.2	5.8	---
02	(280)	2.7			110	2.8	5.0	---
03	(300)	3.1			120	3.2	5.2	---
04	(300)	< 3.4			110	3.0	5.0	---
05	360	3.4			110	3.0	4.7	---
06	(350)	(2.8)			110	3.5	4.9	---
07	(320)	3.0			120	3.0	5.8	(3.0)
08	280	< 3.6			110	2.5	4.4	3.0
09	260	4.0	---	---	110	2.5	5.4	3.2
10	260	4.4	---	---	110	2.6	3.0	3.1
11	270	5.0	220	---	110	2.6		3.1
12	270	5.3	230	---	110	2.6		3.0
13	270	5.4	230	3.2	110	2.4		3.1
14	260	5.6	220	---	120	2.4		3.1
15	240	5.4	---	---	120	2.3		3.1
16	240	5.1			120	2.3		3.2
17	280	4.3			120	2.3		3.0
18	300	3.5			110	2.5		2.9
19	300	3.2			120	2.8		2.9
20	300	3.2			120	2.8	3.6	2.9
21	300	3.0			120	2.4	5.7	2.8
22	290	3.0			120	2.5	7.9	(3.0)
23	280	3.0			120	2.4	8.0	---

Time: 90.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 16 seconds.

Table 31

Fort Chimo, Canada (58.1°N, 68.3°W) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	< 2.6			110	2.6	4.8	
01	---	(2.5)			100	2.8	4.2	
02	---	< 2.7			110	3.0	3.5	
03	(310)	< 3.3			100	3.2	4.0	
04	---	< 3.1			100	3.2	4.2	
05	---	---			100	2.8	4.4	
06	---	< 2.5			120	3.2	3.6	---
07	(240)	3.2			100	1.3	3.2	(3.4)
08	250	4.2	---	---	100	1.8		3.4
09	240	4.7	220	---	100	2.0		3.4
10	260	5.0	230	---	110	2.4		3.4
11	260	5.0	230	3.3	110	2.4		3.4
12	260	5.0	230	3.2	120	2.4		3.4
13	260	5.2	230	---	120	2.2		3.3
14	250	5.1	---	---	120	2.0		3.3
15	260	5.0			120	1.7		(3.4)
16	270	4.1			110	2.6	2.4	---
17	280	3.4			110	2.8	2.3	---
18	(300)	< 3.1			110	2.8	4.2	---
19	(250)	2.8			120	2.6	5.5	---
20	250	3.0			100	2.4	5.6	---
21	(270)	< 2.8			100	2.8	5.0	
22	---	(2.4)			100	2.4	6.7	
23	---	---			100	3.0	5.8	

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 32

Prince Rupert, Canada (54.3°N, 130.3°W) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	1.7					2.8	
01	290	1.4					4.0	---
02	310	1.4					4.3	
03	300	1.6					4.4	
04	320	1.8					4.1	
05	310	1.8					4.2	
06	(340)	1.9					4.5	
07	300	1.9					4.6	
08	250	2.5			---	---	3.2	---
09	230	4.0	220	---	120	1.9	2.0	3.4
10	240	4.8	210	---	120	2.1	2.3	3.4
11	250	5.4	210	3.3	110	2.3	3.0	3.4
12	250	6.0	220	3.6	110	2.3		3.4
13	240	6.0	220	---	110	2.4		3.4
14	240	5.9	230	---	110	2.2		3.4
15	230	5.5	---	---	120	2.0		3.4
16	220	5.0			160	1.9	2.5	3.4
17	220	3.9			---	---	2.0	3.3
18	220	3.0					2.4	(3.4)
19	240	2.2						---
20	270	1.9						---
21	280	1.8					3.2	---
22	(300)	(1.7)					3.5	---
23	(290)	1.5					3.4	

Time: 120.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 15 seconds.

Table 33

Winnipeg, Canada (49.9°N, 97.4°W) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	360	(2.1)					2.8	(3.0)
01	360	(2.2)						(3.2)
02	340	(2.1)					3.2	(3.1)
03	340	(2.2)					2.8	(3.2)
04	(320)	(2.4)					3.4	---
05	(370)	(2.1)					3.6	---
06	(340)	(2.2)					4.0	---
07	300	2.5					3.1	3.2
08	240	3.4	230	---	---	---		3.4
09	240	4.4	220	---	130	2.2		3.4
10	260	5.0	220	3.5	120	2.3		3.4
11	270	5.6	220	3.5	120	2.5		3.3
12	260	5.9	220	3.7	120	2.6		3.4
13	250	6.0	220	3.6	120	2.6		3.3
14	250	6.0	220	3.4	120	2.5		3.4
15	240	5.9	230	---	120	2.2		3.4
16	230	5.4	---	---	130	2.0		3.4
17	220	4.6						3.4
18	240	3.9						3.3
19	260	2.8						3.2
20	280	2.2						3.2
21	300	2.0						3.2
22	330	(2.2)						(3.1)
23	320	(2.2)						---

Time: 90.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 16 seconds.

Table 34

St. John's, Newfoundland (47.6°N, 52.7°W) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	2.0					3.0	3.0
01	320	1.8					3.3	3.0
02	300	1.9					3.0	3.0
03	290	2.0					3.0	3.0
04	280	1.8					3.0	3.2
05	260	1.6					3.0	3.2
06	280	1.9	---	---	---	E	3.0	3.1
07	240	3.7	240	---	120	1.8	1.9	3.5
08	240	4.4	220	3.1	120	2.1	3.0	3.6
09	250	4.8	210	3.4	120	2.4		3.6
10	260	5.2	210	3.6	120	2.6		3.5
11	270	5.7	210	3.7	120	2.7		3.6
12	270	5.8	220	3.7	130	2.7		3.5
13	260	5.6	220	3.5	130	2.6		3.6
14	250	5.6	230	3.4	130	2.3		3.6
15	240	5.8	240	2.6	140	1.9		3.6
16	230	4.8	---	---	---	E		3.5
17	240	4.2			---	---	2.0	3.4
18	250	3.1						3.3
19	270	2.5						3.2
20	280	2.2						3.0
21	300	2.1					2.4	3.0
22	320	2.0					3.0	2.9
23	330	2.0					3.0	3.0

Time: 60.0°W.
Sweep: 0.8 Mc to 10.0 Mc in 18 seconds.

Table 35

Ottawa, Canada (45.4°N, 75.9°W) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	2.0					2.4	3.0
01	320	2.0					3.1	3.0
02	300	2.0					2.5	3.0
03	310	2.0					3.0	3.0
04	280	2.0					2.8	3.2
05	280	2.1					3.0	3.1
06	280	2.0					3.1	(3.2)
07	250	2.8	---	---	---	---		3.2
08	230	4.5	230	---	120	2.0		3.4
09	240	5.2	220	3.2	120	2.2		3.4
10	250	5.3	210	3.5	120	2.5		3.4
11	270	5.8	220	3.7	120	2.7		3.4
12	260	6.2	210	3.8	120	2.8		3.4
13	260	6.0	220	3.7	120	2.7		3.3
14	260	6.0	230	3.4	120	2.5		3.4
15	240	6.0	230	---	120	2.2		3.4
16	230	5.5	---	---	120	1.9		3.4
17	220	4.9						3.3
18	230	3.9						3.3
19	250	3.1						3.2
20	270	2.4						3.2
21	290	2.1						3.1
22	310	2.0						3.0
23	300	2.0						3.0

Time: 75.0°W.
Sweep: 1.0 Mc to 10.0 Mc in 15 seconds.

Table 36

Baguio, P. I. (16.4°N, 120.6°E) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	(4.5)						(3.2)
01	240	4.6						3.3
02	230	4.2						(3.5)
03	220	3.0						3.4
04	250	2.0						3.4
05	250	---						(3.1)
06	260	3.2						3.2
07	240	5.8			120	2.1	3.0	3.3
08	(280)	7.2	220	---	110	2.6	3.8	3.1
09	300	8.4	220	---	110	2.9	4.6	3.0
10	320	9.2	210	(4.2)	110	3.1	4.4	2.8
11	320	9.2	200	4.3	110	3.2	4.6	2.6
12	320	9.2	200	4.3	110	3.3	5.1	2.7
13	300	9.3	200	4.2	110	3.1	5.0	2.8
14	300	9.4	200	---	110	---	5.1	2.9
15	280	9.5	210	---	---	---	5.6	3.0
16	260	9.6	230	---	---	---	4.5	3.2
17	240	9.4					3.5	3.4
18	220	9.0					2.6	3.4
19	220	7.4					4.0	3.3
20	230	6.0					2.2	3.2
21	250	6.0						3.1
22	240	5.5						3.2
23	250	(5.0)						3.1

Time: 120.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 37

Johannesburg, Union of S. Africa (26.2°S, 28.1°E) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	<280	3.5						3.0
01	260	3.4						3.1
02	250	3.4						3.1
03	250	3.1						3.1
04	250	3.0					1.8	3.1
05	240	3.1						3.2
06	240	4.8	230	2.9	120	1.9	2.6	3.4
07	260	5.4	220	3.7	110	2.5	3.0	3.2
08	300	5.8	210	4.2	110	2.9	3.6	3.1
09	330	6.2	210	4.3	110	3.1	3.9	3.1
10	340	6.4	200	4.4	110	3.3	3.8	3.0
11	340	6.9	200	4.6	110	3.4	3.8	2.9
12	330	7.6	200	4.5	110	3.4	3.7	2.9
13	320	8.2	210	4.5	110	3.4	3.8	2.9
14	300	8.2	210	4.4	110	3.3	3.8	3.0
15	300	8.0	210	4.2	110	3.1	3.5	3.0
16	280	7.9	220	4.0	110	2.8	3.5	3.1
17	270	7.8	220	3.6	110	2.4	3.1	3.1
18	250	7.6	240	2.8	120	---	2.6	3.2
19	230	7.0					2.4	3.2
20	230	5.8					2.6	3.2
21	230	4.6					2.0	3.2
22	250	3.8						3.1
23	280	3.6					1.7	3.0

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 38

Watheroo, W. Australia (30.3°S, 115.9°E) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.7					3.2	2.9
01	260	3.7					3.4	3.0
02	260	3.5					3.6	3.0
03	250	3.2					3.4	3.0
04	250	3.0					2.6	3.0
05	270	3.2				---	2.5	3.1
06	250	4.3	250	3.1		1.8	3.0	3.4
07	300	5.2	240	3.7		2.5	3.6	3.3
08	310	5.5	230	4.2		2.8	4.2	3.2
09	(340)	5.6	210	4.4		3.1	4.1	(3.1)
10	350	6.0	220	---		3.2	5.8	3.0
11	360	6.3	200	---		3.3	4.8	2.9
12	340	6.7	---	---		3.3	4.6	2.9
13	320	6.4	210	---		3.3	4.2	(3.0)
14	320	6.6	230	4.4		3.3	4.2	3.0
15	310	6.7	240	4.4		3.1	3.8	3.1
16	310	6.5	240	4.2		2.9	4.1	3.1
17	290	6.5	240	3.7		2.5	4.0	3.2
18	260	6.2	250	3.0		1.9	3.4	3.2
19	250	6.0					2.6	3.2
20	240	(4.9)					2.8	(3.1)
21	260	3.9					2.5	2.9
22	270	3.7					3.3	2.9
23	280	3.6					3.0	2.9

Time: 120.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 2 minutes.

Table 39

Capetown, Union of S. Africa (34.2°S, 18.3°E) November 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.4					1.8	3.0
01	<280	3.4					1.8	3.0
02	270	3.4					1.5	3.0
03	260	3.2					1.8	3.0
04	250	3.1					1.8	3.1
05	250	3.1						3.1
06	240	4.2	240	---	130	1.7		3.3
07	260	5.2	230	3.5	120	2.2		3.2
08	290	5.5	220	3.9	120	2.7	3.0	3.2
09	320	6.0	220	4.2	120	3.0	3.3	3.0
10	340	6.1	210	4.3	110	3.2	3.8	3.0
11	340	6.7	210	4.4	110	3.3	3.7	2.9
12	340	7.3	210	4.4	110	3.4	3.8	2.9
13	330	7.7	200	4.4	110	3.4	3.6	3.0
14	320	7.8	210	4.4	110	3.3	3.6	3.0
15	310	7.8	220	4.3	110	3.2	3.6	3.0
16	300	7.4	220	4.1	110	3.0		3.0
17	290	7.0	220	3.9	110	2.7	3.0	3.1
18	270	6.9	230	3.5	120	2.2	2.7	3.2
19	240	6.2	240	---	120	---	2.4	3.3
20	230	6.0					2.0	3.3
21	230	5.0					2.0	3.2
22	240	4.0					2.1	3.1
23	250	3.6					2.0	3.0

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 40

Fort Chimo, Canada (58.1°N, 68.3°W) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(260)	<2.8			---	---	5.6	---
01	---	(2.4)			---	2.5	4.3	---
02	(300)	<3.2			110	2.7	4.0	---
03	---	<3.3			100	3.2	4.0	---
04	---	<3.1			100	3.2	4.0	---
05	---	<2.3			100	3.3	3.6	---
06	290	<3.2	---	---	100	3.1	3.8	(3.1)
07	260	3.8	---	---	100	2.3	3.0	3.4
08	260	4.3	220	---	100	2.2	2.8	3.4
09	290	4.5	220	3.6	110	2.4		3.2
10	300	4.8	220	3.7	110	2.5		3.2
11	300	5.0	210	3.7	100	2.5		3.2
12	300	5.0	220	3.7	100	2.6		3.2
13	280	5.0	230	3.6	100	2.5		3.2
14	290	5.0	240	3.4	100	2.3		3.2
15	270	4.8	240	---	110	2.2		3.2
16	280	4.4	---	---	110	2.3	2.5	(3.3)
17	300	4.0			110	2.6	3.8	---
18	280	3.6			120	2.8	4.5	---
19	250	3.2			---	2.4	5.5	---
20	240	2.8			---	---	6.5	---
21	(300)	2.9			---	---	5.2	---
22	(300)	<2.8			---	---	6.0	---
23	(260)	2.6			---	---	6.8	---

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 41

Rarotonga I. (21.3°S, 159.8°W) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	6.0					2.8	3.0
01	250	5.2					2.5	3.2
02	240	4.8					2.6	3.0
03	270	3.9					1.9	2.9
04	280	3.8						2.9
05	270	3.6						3.0
06	250	5.0			---	E	2.5	3.2
07	250	6.8	230	3.2	120	2.3	3.1	3.4
08	270	7.6	220	4.1	110	2.8	3.8	3.3
09	280	8.2	220	4.4	110	3.1	4.2	3.3
10	290	8.7	210	4.5	110	3.3	4.3	3.2
11	290	9.4	210	4.6	105	3.4	4.6	3.2
12	290	9.5	200	4.5	105	3.4	4.2	3.2
13	280	9.7	200	4.5	110	3.4	4.1	3.2
14	280	8.9	200	4.5	110	3.3	4.0	3.1
15	290	7.8	200	4.3	110	3.1	3.8	3.1
16	290	8.3	220	4.0	110	2.8	3.3	3.0
17	270	8.3	240	3.3	120	2.3	3.2	3.1
18	250	8.6			---	E	3.4	3.1
19	250	7.5					3.8	3.0
20	260	6.9					3.1	3.0
21	280	6.4					3.0	2.9
22	280	6.1					3.0	2.9
23	290	5.7					2.7	2.8

Time: 157.5°W.
Sweep: 2.0 Mc to 16.0 Mc, manual operation.

Table 42

Christchurch, New Zealand (43.6°S, 172.7°E) October 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.5						2.9
01	280	3.3						2.9
02	280	2.9						3.0
03	270	2.6						3.0
04	270	2.4						3.0
05	280	2.6				1.2		3.1
06	260	3.7	250	3.2		1.7		3.3
07	300	4.2	250	3.6		2.2		3.3
08	360	4.6	230	3.9		2.6		3.1
09	330	5.0	230	4.1		2.8		3.1
10	330	5.4	220	4.2		3.0		3.1
11	320	5.7	220	4.3		3.0		3.2
12	320	5.7	220	4.3		3.1		3.2
13	320	5.8	220	4.3		3.1		3.2
14	300	5.8	220	4.2		3.0		3.2
15	300	5.5	230	4.1		2.8		3.3
16	280	5.5	230	3.8		2.4		3.2
17	270	5.3	250	3.3		2.0		3.2
18	260	5.3	270	(2.5)		1.4		3.2
19	250	5.3						3.1
20	260	5.0						3.0
21	260	4.4						3.0
22	270	4.0						3.0
23	280	3.5						2.9

Time: 172.5°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 43*

Inverness, Scotland (57.4°N, 4.2°W) September 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	2.0						2.8
01	325	(2.0)					2.2	2.7
02	345	(1.8)					2.4	(2.8)
03	350	(1.8)						(2.8)
04	340	(1.7)					2.4	(2.8)
05	305	(2.0)					2.6	(2.8)
06	275	2.6	(265)	(2.7)	(125)	(1.7)	2.4	3.1
07	255	3.4	235	3.1	130	1.8	2.6	3.3
08	330	4.0	220	3.4	115	2.1	2.5	3.2
09	345	4.1	220	3.7	115	2.3	2.6	3.1
10	355	4.4	210	3.8	110	2.6	2.8	3.2
11	350	4.6	205	3.9	110	2.7	2.7	3.1
12	340	4.8	205	4.0	110	2.7	2.8	3.1
13	325	4.8	210	4.0	110	2.7	2.8	3.1
14	325	4.7	215	4.0	110	2.6	2.7	3.1
15	310	4.8	220	3.8	110	2.6		3.2
16	305	4.7	225	3.5	115	2.3	2.6	3.1
17	290	5.0	240	3.3	125	2.0	2.5	3.1
18	280	5.2	(255)	(2.8)	(150)	(1.7)	1.8	3.1
19	260	5.2					2.3	3.1
20	265	4.8						3.1
21	265	4.0						3.1
22	285	2.7						3.1
23	310	2.3						2.9

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 44*

Slough, England (51.5°N, 0.6°W) September 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	295	3.0					2.7	2.8
01	290	2.8					3.0	2.8
02	295	2.6					3.2	2.8
03	300	2.4					3.0	2.8
04	305	2.2					3.8	2.8
05	285	2.2					3.8	2.9
06	260	3.2	235		130	1.7	2.6	3.3
07	310	3.9	235	3.3	125	2.0	4.0	3.3
08	355	4.2	225	3.7	120	2.4	4.4	3.2
09	355	4.7	225	3.9	120	2.7	4.4	3.2
10	345	5.0	220	4.1	120	2.9	4.2	3.3
11	330	5.1	215	4.2	115	2.9	4.3	3.2
12	325	5.2	215	4.2	120	3.0	4.3	3.2
13	340	5.2	220	4.2	120	3.0	4.2	3.2
14	310	5.2	220	4.1	120	2.9	3.8	3.2
15	325	5.1	225	3.9	120	2.7	4.2	3.2
16	310	5.1	235	3.7	120	2.4	3.9	3.2
17	295	5.4	240	3.4	125	2.0	3.5	3.1
18	260	5.8			(135)	1.7	3.4	3.1
19	250	5.8					2.6	3.1
20	245	5.4					2.9	3.1
21	255	4.7					2.6	3.0
22	270	3.6					2.6	3.0
23	295	3.1					2.8	2.8

Time: 0.0°.
Sweep: 0.55 Mc to 16.5 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 45*

Kartoum, Sudan (15.6°N, 32.6°E) September 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	335	(3.7)					3.1	(2.6)
01	300	(3.5)					3.1	
02	260	(3.4)					3.1	
03	240	(3.6)					1.6	
04	240	(3.0)					3.0	(3.1)
05	250	(2.9)					3.1	(3.2)
06	235	5.3			(145)	(2.1)	4.0	3.4
07	245	6.6	225	3.6	(130)	2.6	4.3	3.3
08	275	7.1	220	4.1	(120)	(2.8)	4.5	3.0
09	315	7.8	215	4.3	(120)	3.2	4.9	2.8
10	335	8.6	215	4.5	(120)	(3.6)	5.0	2.7
11	345	9.0	220	4.5	(125)	(3.5)	5.2	2.6
12	345	9.7	210	4.5	(140)	(3.6)	5.0	2.5
13	340	10.0	225	4.4	(125)	(3.5)	5.5	2.6
14	330	10.4	225	4.3	(130)	(3.4)	5.3	2.7
15	310	11.3	220	4.1	(125)	(3.1)	5.0	2.8
16	285	12.5	225	3.8	(115)	(2.8)	6.9	3.0
17	295	12.4	(230)	(3.5)			5.9	3.1
18	235	11.2					5.0	3.0
19	240	9.4					3.2	3.0
20	245	8.3					3.1	2.9
21	275	(7.0)					4.2	2.6
22	315	(6.1)					3.2	(2.6)
23	340	(5.0)					3.1	(2.6)

Time: 30.0°E.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 46*

Singapore, British Malaya (1.3°N, 103.8°E) September 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	220	4.4					2.4	3.2
01	245	3.7					2.8	3.1
02	250	3.2					2.4	3.1
03	260	2.3					3.1	3.1
04	270	2.2					2.6	3.2
05	265	2.0					3.0	3.2
06	260	3.8			(145)	(1.2)	2.8	3.1
07	260	6.8	235		125	2.2	3.8	3.2
08	295	8.2	220	(4.3)	120	2.8	5.5	2.9
09	315	8.9	210	4.5	115	3.1	5.4	2.6
10	330	9.3	205	4.6	110	3.4	5.6	2.4
11	350	9.4	200	4.7	110	3.5	6.8	2.3
12	355	9.5	200	4.7	110	3.5	6.0	2.4
13	345	9.4	200	4.6	110	3.5	6.1	2.5
14	325	9.6	200	4.5	110	3.4	5.7	2.5
15	315	9.5	210	4.4	110	3.2	5.8	2.5
16	305	9.6	235		115	2.8	4.8	2.5
17	280	9.8	240		120	2.3	4.4	2.6
18	260	9.8				(1.5)	4.6	2.7
19	265	9.7					3.5	2.8
20	250	9.4					3.1	3.0
21	230	8.6					3.1	3.2
22	220	8.0					2.9	3.3
23	215	5.8					2.3	3.3

Time: 105.0°E.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 47

Rarotonga I. (21.3°S, 159.8°W) September 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	4.5						3.0
01	260	4.2					2.2	3.1
02	250	3.5						3.1
03	290	3.1						3.0
04	300	2.7						2.9
05	310	2.9						2.9
06	280	3.0						2.9
07	250	5.9	210	2.3	120	2.0	2.6	3.3
08	270	7.2	230	4.0	115	2.5	2.9	3.4
09	270	7.4	220	4.3	110	2.9	3.5	3.4
10	270	7.4	210	4.4	110	3.2	3.7	3.4
11	280	7.5	210	4.5	105	3.3	3.8	3.4
12	270	7.2	210	4.5	105	3.3	4.4	3.4
13	270	7.4	200	4.5	105	3.3	4.8	3.4
14	280	6.8	200	4.4	105	3.2	4.8	3.4
15	290	6.2	210	4.3	110	3.0	4.1	3.2
16	270	6.2	200	4.0	110	2.8	3.6	3.2
17	250	6.2	220	2.9	115	2.3	3.2	3.2
18	260	6.6					3.0	3.1
19	260	6.7					3.0	3.0
20	260	5.2					2.9	3.0
21	290	5.1					2.2	2.9
22	300	4.9					1.9	2.9
23	280	4.6					2.2	3.0

Time: 157.5°W.
Sweep: 2.0 Mc to 16.0 Mc, manual operation.

Table 48

Christchurch, New Zealand (43.6°S, 172.7°E) September 1953

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	2.2						3.0
01	280	2.1					2.2	3.0
02	280	2.0						3.0
03	270	2.0					2.7	3.0
04	280	1.8					1.8	3.1
05	290	1.7						3.0
06	270	2.8				1.4		3.2
07	260	3.8	240	3.0		1.8	3.5	3.4
08	280	4.2	240	3.7		2.3		3.3
09	350	4.6	230	4.0		2.6		3.2
10	350	4.8	220	4.1		2.7		3.1
11	370	4.9	230	4.2		2.8		3.1
12	340	5.0	220	4.2		3.0		3.1
13	340	5.1	220	4.2		2.9		3.1
14	320	5.3	220	4.1		2.8		3.2
15	300	5.0	230	3.8		2.6		3.2
16	280	5.0	240	3.5		2.3		3.3
17	260	4.9	240	2.7		1.8		3.3
18	240	4.4	---	---		---		3.2
19	260	3.9						2.9
20	270	3.5						2.9
21	280	3.1						2.9
22	280	3.0						2.9
23	280	2.6						2.9

Time: 172.5°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

TABLE 49

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

Form adopted June 1946

h'F2 (Characteristic), Km (Unit), February (Month), 1954

Observed at Washington, D. C.

Lat 38.7° N, Long 77.1° W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: F. J. M., J.W.P., E. J. W.

Calculated by: F.J.M., J.W.P., S. K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(300)S	(290)S	260	(270)S	250	(240)S	230	220	230	240	290	320	310	300	300	280	240	230	240	(250)S	(270)S	(280)S	(280)S	(270)S
2	260	240	(260)S	270	260	250	(250)S	(250)S	220	220	270	270	[270]L	270	280	280	260	230	230	250	240	(270)S	(250)S	(270)S
3	270	240	240	250	(280)S	S	S	(250)S	240	240	250	270	280	300	270	260	250	230	200	(250)S	(220)S	(240)S	S	S
4 •	S	(300)S	(280)S	(270)S	240	(250)S	(250)S	260	220	240	260	260	240	260	260	(270)L	240	210	210	220	(250)S	(250)S	S	S
5	S	S	270	270	250	240	230	220	220	230	250	280	250	(270)L	270	260	240	220	220	(240)S	(240)S	(280)S	(270)S	(290)S
6	S	S	(250)S	250	230	240	(230)S	230	210	230H	250	260	250	260	270	250	230	220	230	A	A	A	A	A
7	A	A	A	(280)A	(260)S	230	(220)S	A	A	240	270H	260	250	250	280	280	250	230	210	(220)S	(250)S	(280)S	S	S
8	S	(250)S	230	230	230	210	(230)S	220H	220	230H	250	250	240	250	250H	250	250	220	210	220	(240)S	(240)S	(250)S	(280)S
9	[270]S	(260)S	260	250	250	230	220	220	220	230	230	250	260	250	260	240	240	220	200	220	(260)S	(280)S	(280)S	(290)S
10	(300)S	(280)S	260	260	250	230	(230)S	230	220	230	260	240	260	280	270	250	250	210	220	240	(240)S	(280)S	270	280
11	(270)S	250	250	230	240	230	(230)S	240	220	(240)L	260	270	260	280	280	260	270	240	210	220	(270)S	(240)S	(270)S	[280]S
12	(280)S	(280)S	250	260	250	(230)A	230	230	230	250	240	280	280	260	250	270	230	240	(220)A	(280)S	260	260	260	250
13	250	260	240	270	270	(280)S	240	220	220	230	230	280	280	280	250	270	(250)L	230	210	220	250	(250)S	(260)S	(250)S
14	(290)F	(270)S	270	280	250	250	250	240	240	250	260	250	270	270	260	270	260	230	220	230	240	260	250	(250)S
15	(290)S	(320)S	300	260	250	230	270	240	270	390	360	460	300	310	270	300	270	240	230	220	(250)S	(270)S	240	(240)S
16	(270)S	270	270	240	250	260	(260)S	260	(280)L	L	G	320	340	290	360	280	270	240	250	260	(270)S	(260)S	(270)S	260
17	(250)S	260	250	250	270	(260)S	(290)S	250	240	(270)L	330	330	320	300	300	300	280	260	240	240	(250)S	(250)S	250	S
18	S	S	S	S	S	S	E	250	260	270	300	310	290	300	310	290	260	230	220	250	240	(250)S	(260)S	S
19	S	S	290	320	300	(250)S	(240)S	220	230	230	250	280	310H	260	270	260	250	250	230	240	230	230	(260)S	(270)S
20	(300)S	(290)S	(270)S	(270)S	(270)S	240	220	230	220	230	240	270	270	270	(300)H	260	250	230	220	(250)S	(240)S	(270)A	[270]S	(270)S
21	(290)S	(270)S	250	270	260	250	230	230	230	240	270K	300K	300K	300K	280K	270K	240K	230K	230K	230K	280K	270	[280]S	(280)S
22	(290)S	(250)S	230	270	(250)S	(260)S	(280)S	230	(270)L	(260)L	320	340	300	330	300	310	270	250	230	250	240	(280)S	[290]S	(300)S
23	S	S	S	S	E	E	E	260	(250)L	300	300	300	280	300	300	270	270	270	230	230	(260)S	(290)S	(280)S	S
24	S	S	<300E	S	S	S	S	230	250	(260)H	300	380	380	300	300	290	290	250	210	250	(240)S	(230)S	S	S
25	S	S	S	(280)S	270S	(260)S	(280)S	220H	230	(290)L	(300)L	300	330	290	280	300	270	250	220	210	240	(300)S	(280)S	(290)S
26	S	300	(300)S	280	290	(290)S	[270]S	250	250	250	460	420F	420	360	450	450	(330)S	240	250	260	(250)S	S	S	S
27	S	(250)S	(300)S	250	270	<350S	340S	220	(270)L	310	390	330	360	460	480	400	(330)L	260	240	(250)S	320	(300)S	[320]S	S
28	S	(340)S	300	(270)F	270	260	270	240	270	230	350	380	340	330	320	340H	280	250	220	220	260S	260S	260	260
29																								
30																								
31																								
Median	(280)	(270)	260	270	260	250	240	230	230	240	270	280	280	280	280	270	260	230	220	240	(250)	(260)	(270)	(270)
Count	15	20	23	25	26	24	26	27	27	27	28	28	28	28	28	28	28	28	28	27	27	26	22	18

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 50

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

foF2 (Characteristic), Mc (Unit), February (Month), 1954

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1° W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: F. J. M., J.W.P., E. J. W.

Calculated by: F. J. M, J.W.P., S.K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(1.9)F	(2.7)F	(3.0)F	(3.2)F	(3.0)FS	3.7	3.1	2.8	3.9	(4.3)S	5.2	5.6	6.0	6.4	5.8	5.7	5.6	4.4	3.5	3.0	2.5F	2.7	2.8FS	3.1F
2	(3.5)FS	(3.0)F	(2.4)F	(2.5)F	(3.2)F	3.2	3.0F	3.1	4.7	4.8	5.2	6.1	(4.9)P	5.6	5.2	4.9	5.0	4.8	3.8S	3.1	3.1F	(2.4)F	(2.8)PF	2.7
3	3.3F	3.3F	3.1F	2.4F	2.0F	[1.8]AS	[1.9]F	2.6F	4.1	4.7	4.8	5.1	5.7	5.2	5.5	5.4	5.2	4.6	(4.1)S	3.0F	2.9	(2.6)S	2.2JS	F
4	FS	(2.4)FS	FS	F	FS	(2.6)PS	(2.6)FS	(3.0)F	4.4	5.0	5.9	6.3	5.9	6.0	5.8	5.8	6.0	5.6Z	4.0	2.9	2.5F	2.2F	1.9F	1.9F
5	(1.8)JF	[2.0]FS	2.3F	(2.3)PF	(2.4)PF	(2.4)PF	(2.7)PF	3.1F	4.7	4.8	5.3	6.3	5.8	5.4	5.8	6.0	6.3	5.6	4.2	2.9	2.4	2.1	2.3F	(2.2)F
6	(1.8)JF	(2.1)F	(2.4)F	(2.7)F	3.0F	3.0F	2.9F	3.2	4.9	(5.6)H	6.1	6.4	5.8	5.5	5.6	5.5	5.8	5.0F	3.6F	(3.0)A	A	A	A	A
7	A	A	A	(2.5)F	2.8	2.9	2.6	3.2	[4.7]A	5.8	(6.0)JH	5.6	6.0	6.1	5.5	5.6	5.8	5.8	4.8	3.0	2.6	2.2	(2.0)F	2.3
8	2.4	(2.7)S	2.9F	2.8	2.9	3.0	(2.6)S	3.1JH	4.7	(5.6)H	5.3	5.6	6.2	(5.9)S	(5.6)H	5.6	5.6	6.0	4.7	3.7	3.2	2.8FS	2.4	2.2
9	2.3	2.4	2.7	3.1	3.0F	3.3	(3.2)FS	3.3	5.0	5.3	5.1	5.7	5.9	6.3	7.0	6.3	5.6	5.4	4.3F	2.7F	2.4F	2.1F	(2.0)FS	(2.1)F
10	2.1F	1.9F	2.3F	2.2F	2.8F	2.9F	2.9	3.1	4.5	5.2JS	5.5	5.5	5.7	6.4H	6.4	6.1	5.6	5.0	4.1	3.4F	2.5	2.3	2.7	2.5
11	2.8	(3.2)S	(3.2)S	3.2	3.0	2.9	(2.4)S	2.9	4.5	4.8	6.0	5.2	5.7	5.4	5.4	5.9JS	5.8	5.8	4.6	3.3	2.4	2.3	2.1	(1.9)S
12	(2.1)FS	(2.3)FA	2.7	3.1	3.5	3.6	3.3	4.1	5.3	5.4	5.2	5.8	5.4	5.7	5.9	6.0	5.2	5.7	4.4	2.6	2.5	2.4	2.6JS	3.0
13	2.9	3.0F	(3.0)FS	(2.8)PF	[2.7]FS	(2.6)PF	(3.5)PF	4.0	4.6	5.2	(5.0)S	(5.8)PF	5.7	5.6	5.8	4.9F	(5.2)PF	6.0	(4.6)S	(3.2)PF	2.7F	(2.5)F	(2.3)PF	FS
14	F	(2.2)F	(2.4)F	(2.8)F	(2.9)F	3.0F	(3.0)F	3.7F	4.9	5.3	5.7	5.7	5.8	6.7	6.4	5.8	5.4	5.6	4.8	3.8	3.2	3.0	3.0	2.6F
15	2.0F	1.8F	2.3F	2.7	2.8	2.6	2.1FS	2.8	4.0	(4.3)H	4.3	4.4	5.6	5.0	5.1	4.9	4.8	4.5	4.1	3.5	3.0	3.3	3.1	3.1
16	3.1	3.2	3.3	3.5F	(2.8)F	2.5F	2.4F	3.0	3.8	4.0	<3.6G	4.5	4.7	5.4	4.6	5.0	4.8	4.9	3.5	3.4	3.0	2.8	2.6	2.9
17	2.7	2.9	2.7	2.5	2.4	2.4F	(2.0)PS	2.6F	3.8	4.2F	4.3	4.7	5.1	5.3	5.3	5.2	5.2	5.2	4.7	(4.4)F	(3.4)S	(2.8)F	(2.5)F	F
18	FS	FS	FS	FS	F	F	<1.0E	2.9	4.2	4.8	4.8	4.8	5.3	5.0	5.2	5.4	5.4	5.0	4.5F	3.6F	3.0	2.4F	(1.9)F	(1.8)F
19	[1.8]FS	(1.7)JF	(1.9)F	(1.9)F	(2.3)F	(2.8)F	(2.4)F	(3.4)PS	4.1	4.7	5.6	5.6	(5.8)H	6.3	5.6	5.4	5.4	5.2	4.6	4.0	3.7	3.0	2.4	2.2F
20	(2.1)FS	(2.2)SF	2.6	2.9	2.9	3.2	3.0	3.8	4.6	4.9	5.1	5.8	6.6	6.0	(6.0)H	5.8	5.7	5.7	4.5	3.3	3.0	2.3	2.2	2.5
21	2.6	2.8	3.1	(2.8)F	3.0	2.7F	(2.6)S	3.6	5.1	5.4	5.5K	5.7K	6.6K	7.8K	8.4K	8.6K	8.0K	6.2K	6.6K	4.5K	(3.5)SK	(2.9)F	(2.9)SF	(3.4)S
22	(3.4)F	(3.5)FS	(2.9)F	(2.8)F	(2.9)F	2.5	2.4	3.0F	(4.6)FS	(4.5)F	4.7F	5.0F	5.2	4.8	4.9	5.0	5.4	5.2	(4.3)FS	4.2	3.7	(2.5)FS	(2.6)FH	[2.2]F
23	[2.0]F	(1.8)F	(1.7)SF	FS	<1.0E	<1.0E	<1.0E	2.8	(3.6)SF	4.4F	5.0	5.0	6.0	5.0	5.6	5.8	5.5	5.0F	4.9	4.0	2.7	2.2F	1.9F	FS
24	1.5JS	[1.6]FS	1.7	1.8	(1.9)S	2.0	(1.9)S	3.3	4.2	(4.5)H	4.7	4.8	5.4	5.8	5.2	5.6	5.4	5.5	4.6	3.9	3.2	2.6	2.0JS	(1.8)S
25	1.8JS	1.7JS	(1.7)JS	(1.9)S	(2.2)F	(2.2)F	(2.1)F	(3.4)SH	4.0	(4.7)FS	4.9	5.4	5.4	5.8	5.5	5.6	6.0	5.4	4.6	3.2	2.5	(2.0)F	2.1F	2.0F
26	(2.0)F	(2.1)F	2.0F	(2.0)F	(2.1)F	(2.1)FS	[2.3]S	2.9F	3.5	3.9H	4.0	(4.3)F	4.3S	4.9	4.5	4.8	5.2S	5.2	4.5	3.4	2.1S	S	S	S
27	S	(2.0)FS	(2.4)F	(2.7)JF	(2.8)PF	(2.2)F	(2.1)FP	(3.1)F	3.9FS	4.1	4.2	4.5	4.6	4.5	4.4	4.5H	4.3	4.4F	(4.2)S	3.2	2.3S	2.1S	1.8JS	[1.9]S
28	S	F	(2.2)JF	(2.4)JF	(2.5)JF	(2.4)F	2.6	3.9	4.7	4.7	4.8	4.9	5.3	5.4	5.4V	5.3H	4.9	5.0	4.7	3.8	3.3	3.0	2.7	2.4
29																								
30																								
31																								
Median	2.1	(2.3)	2.4	(2.7)	(2.8)	2.6	(2.6)	3.1	4.5	4.8	5.1	5.6	5.7	5.6	5.6	5.6	5.4	5.2	4.5	3.4	2.9	2.4	2.4	2.2
Count	22	25	25	25	26	27	28	28	28	28	28	28	28	28	28	28	28	28	28	28	27	26	26	22

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 51

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

Form adopted June 1946

foF2 (Characteristic), Mc (Unit), February (Month), 1954

Observed at Washington, D.C.

Lat. 38.7°N, Long. 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: F.J.M., J.W.P., E.J.W.

Calculated by: F.J.M., J.W.P., S.K.

Day	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330
1	(2.0)F	3.0F	(3.4)F	(2.9)F	(3.8)F	(3.6)F	2.5	3.4	4.7	4.9	5.5	6.2	6.7	6.0	5.9	5.7	4.9	3.8	3.2	(2.9)F	2.5F	(2.7)S	3.0	(3.4)S
2	(3.4)S	(3.0)F	(2.7)F	(3.1)F	3.2	3.2	2.8F	4.1	4.7	5.0JH	5.4	5.8	5.8Y	5.2JS	5.2JS	4.7	5.1PS	4.2	(3.4)FS	(3.2)FS	3.0F	(2.7)PF	2.9	3.1
3	3.4F	3.2F	2.8F	2.2F	1.8F	1.8JF	(2.0)F	3.6	4.7	4.5	4.8	5.1	5.4	5.4	5.4	5.2	5.2	4.4	(3.2)FS	3.1JS	2.8	2.6	(2.5)S	S
4	FS	F	(2.7)FS	F	FS	(2.5)FS	(2.5)JF	4.0F	4.5	5.0	6.2	6.2	6.0	5.8	5.8	5.0	5.2	(5.6)HS	3.3S	2.6F	2.3F	2.0F	1.9F	(1.9)FJ
5	[2.0]S	(2.2)PS	(2.2)F	(2.2)F	(2.2)F	2.3F	2.6F	4.3	5.1JS	5.0	5.2	6.4	5.7	5.4	5.6	6.6	5.8	4.8	3.7	2.7	2.2F	2.2F	2.2F	2.0JF
6	(1.9)F	(2.3)F	2.5F	(2.9)F	3.0F	3.0F	2.9F	5.0	(4.8)H	5.0	5.2	6.2	5.8	5.6	5.6	5.8	5.5	4.4F	3.3	A	A	2.2	A	A
7	A	A	2.6F	2.7F	2.8	2.7	2.4	(4.1)A	5.4	5.8	5.8	(5.6)H	5.8	5.5	5.2	5.8	5.9	5.6	(4.0)S	3.0	2.3	2.2	2.1	2.3F
8	2.5F	2.8JS	2.8	2.8	3.2	2.7F	(2.7)S	4.5	(5.6)H	5.5	5.7	6.3	6.5H	6.0	5.3H	5.4	6.0	5.4	4.2	3.3	3.0FS	[2.6]S	(2.4)S	2.3JS
9	2.2FS	2.5	2.7F	3.1	3.2F	(3.3)FS	2.8	4.6	5.0	5.2	5.0	5.6	6.6	6.2	7.0	5.6	5.4	4.9F	3.6FS	2.5F	2.1F	2.1F	2.0F	2.1F
10	(1.9)F	2.4F	2.4F	2.5F	2.8F	(2.9)F	(2.6)F	3.9	4.7	5.1	5.8	(6.0)S	6.4	6.3	6.3	5.8	5.7	5.0	3.5	3.0	2.4	2.7	2.6	2.7
11	3.0	3.1JS	3.2	3.0	3.0	2.9	(2.4)S	(3.7)S	4.5	5.2	5.7	5.8	5.5	5.6	5.7	6.0	6.2	5.5	3.9	2.7	2.4	2.2	2.0	1.9F
12	2.0F	2.4JS	2.8F	3.4	3.6	3.5	3.4	4.8	5.0	5.9	5.5H	5.6	5.8	6.0	5.6	5.9	5.0	5.4	3.1F	2.5	2.5	2.5	2.7	2.9
13	2.9	3.0F	(2.9)JF	(2.4)PF	FS	[3.0]FA	(3.5)PF	4.0	4.6	5.3	(5.0)PF	5.7F	6.1	6.6	5.2	5.4	6.2	5.2	(3.8)S	(2.8)F	(2.6)F	(2.3)F	FS	F
14	F	(2.4)F	(2.6)F	(3.0)F	(4.0)F	(2.9)F	(2.9)F	4.6	5.3	5.5	5.7	5.5	6.2	6.8	6.3	5.7	5.4	5.2	4.5	3.5	3.1	3.0	2.8	2.4F
15	1.9F	2.0F	2.7F	2.8	2.9	(2.4)F	2.2	3.3	4.3	4.2	4.5	4.9	5.7	5.3	4.9	4.9	5.1	4.5	4.7	3.2	3.0	3.5	(3.2)S	2.9
16	3.1JS	3.2	3.4F	(3.3)PF	(2.5)FS	2.5F	2.5F	3.4	(3.9)H	(4.0)S	4.3	4.2	4.9	4.6	5.2	4.5	4.8	4.2	3.4	3.0	2.8	2.6	2.6	2.7
17	2.9	2.8	2.6	2.3	2.5	(2.1)F	(2.1)PF	3.2F	3.8	(4.1)S	4.5F	4.9	5.0H	5.0	5.3	5.2	5.4	5.0	(4.5)F	(3.7)S	3.1FS	(2.7)F	F	FS
18	F	F	F	F	F	F	FS	3.6	4.4	4.7	5.0	5.2	5.0	5.2	5.4	5.6	5.7	4.6	4.1F	3.2F	2.8	2.1F	(1.7)F	[1.8]F
19	F	(1.9)F	(1.9)F	(2.0)F	(2.6)F	(2.5)F	(2.5)F	4.0	4.5	5.5	6.0	5.9	6.1H	5.8	5.6H	(5.4)H	5.4	4.8	4.2	3.8	3.3	2.5	2.3	(2.1)F
20	2.1JS	2.4	(2.7)F	(2.9)FS	3.0	3.2	2.9	4.7	4.8	5.1	5.6	5.9	6.0	6.2	6.2	5.4	5.6	5.3	3.7	3.2	2.7	2.2	2.4	(2.5)S
21	2.7	3.0	(3.0)FS	2.9	2.8F	(2.6)S	(2.5)FS	4.3	5.0	4.9	5.5K	6.7K	7.0K	7.8K	8.2K	8.6K	6.8K	6.3K	5.6SK	(3.9)SK	3.1FK	(2.6)F	(3.1)F	3.2F
22	(3.5)FS	(3.3)F	(2.7)F	(2.9)F	(2.9)FS	2.4	(2.7)F	3.8F	5.0	4.3F	4.7F	4.9	5.0	5.2	5.0	5.3	5.1	(4.5)S	(4.2)FS	(3.8)S	2.7F	2.4F	[2.3]F	(2.2)F
23	F	(1.7)FS	(1.4)S	FS	S	<1.0E	(1.7)F	3.3	4.5	(4.6)H	5.4	5.2	5.8H	5.5	5.5	5.4	5.0	5.4	4.6	3.2	2.5	2.0	F	S
24	S	(1.6)S	1.8	1.8	1.8	2.1	2.3	3.9	4.2	4.5	4.5H	4.9	5.7	5.6	(5.0)H	5.2	5.4	5.4	4.2	3.3	2.9	2.2	(1.8)J	(1.7)SJ
25	(1.8)JS	[1.8]S	(1.8)FS	(2.1)F	(2.2)F	(2.3)F	(2.6)S	4.3	4.7	5.2	5.0	(5.1)S	5.4	5.5	5.6	5.8	5.6	5.0	4.0	2.7	2.2P	2.0P	2.1F	(2.0)F
26	(2.0)F	(2.2)F	(1.9)F	(2.0)F	(1.9)F	(1.7)S	(2.0)S	3.2	3.7	3.7	4.3	4.5	4.3	4.5	4.7	(4.5)S	5.6S	4.6	4.2	(2.8)S	(1.9)SJ	S	S	S
27	(2.0)FS	(1.9)FS	(2.6)F	2.3F	2.2F	(2.0)FS	2.5	3.9	(4.2)F	G	4.5	4.3	<4.0G	4.5	4.3	4.3	4.4	4.3S	3.8S	2.5	2.1	1.8	1.8	S
28	S	(2.3)FS	(2.2)FJ	(2.1)F	2.3F	2.5F	(3.0)JS	4.3	4.5	4.6P	5.0	5.4	5.1	5.5	5.4H	5.1	5.3	5.3	4.2	3.5	3.2	2.8	2.5	(2.0)F
29																								
30																								
31																								
Median	2.2	2.4	(2.7)	(2.8)	2.8	(2.5)	(2.5)	4.0	4.7	5.0	5.2	5.6	5.8	5.4	5.4	5.4	5.4	5.0	4.0	3.1	2.7	2.4	2.4	2.3
Count	20	25	27	25	24	27	27	28	28	28	28	28	28	28	28	28	28	28	28	27	27	27	23	21

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 52

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

h'F1 (Characteristic), Km (Unit), February (Month), 1954

Observed at Washington, D. C.

Lat. 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: F. J. M., J.W.P., E. J. W.

Calculated by: F. J. M., J.W.P., S. K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									Q	210	200H	200H	210H	200H	230H	210	240	210						
2									Q	200	210H	210H	210	180H	220	210	220H	Q						
3									220	220	200	200	200H	220	230	200	240	220						
4									210	200	190H	200	210	200H	210	230	Q	Q						
5									(210)A	200	220H	200H	210	220	240	240	240	Q						
6									Q	A	Q	200	200H	200H	220	200	230	A						
7									A	220	190H	220	200	200	210	220	240	Q						
8									Q	200H	220	200H	220	210H	220	220H	210H	Q						
9									Q	220	200	230	180H	230	200	210	220	Q						
10									Q	200	200	210	190H	200H	220	200	210	Q						
11									Q	(220)A	200H	220	210	220	(200)A	200	230	Q						
12									210	(210)A	210	200H	220	220	190H	200H	A	Q						
13									Q	(210)A	200	180H	(200)A	210	(230)A	210	220	220						
14									Q	220	(220)A	200H	200H	190H	210	190H	220H	200						
15									230	200H	210	190	190H	210H	210H	220	230	230						
16									230H	210	200H	(220)A	200	200H	230	230	250	Q						
17									Q	200	190H	200H	220	190H	210	220	210	230						
18									220	230	210	220	200	220	240	220	240	220						
19									220	210	250H	200	200H	200H	220	220	200H	210						
20									Q	200	200H	190H	210H	230H	220	230	200	Q						
21									220	200	190K	200K	210K	200K	230K	230K	230K	QK						
22									230	230	210	200H	200	200	250	200	240	220						
23									240	230	210	210	190H	230	230	220	230	250H						
24									200	(200)H	200	200H	220	200H	190H	200H	210	240						
25									210	190H	230	180H	200	190H	200	230	220	230						
26									210	190H	230	190H	190H	190H	220	210H	240	230						
27									220	210	230	200H	190H	(200)S	240	230	260	240						
28								220	190H	190H	180H	230	220	220	220	230	230	A						
29																								
30																								
31																								
Median								–	220	210	200	200	200	200	220	220	230	220						
Count								1	16	27	27	28	28	28	28	28	26	14						

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 53

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

foF1 (Characteristic), Mc (Unit), February (Month), 1954

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: F.J.M., J.W.P., E.J.W.

Calculated by: F.J.M., J.W.P., S.K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									G	L	~	40H	39H	38H	38H	3.4	L	L						
2									G	29	35H	38H	43	39H	3.6	(36)K	L	G						
3									L	L	3-	37	38H	40	37	(33)P	L	L						
4									24	[30]L	(37)L	39	40	[40]L	3.9	L	G	G						
5									L	27	37H	39H	40	(4.0)L	L	L	L	G						
6									G	A	G	39	40H	40	39	L	L	L						
7									A	L	L	L	39	40	3.9	37	L	G						
8									G	L	L	40H	L	L	L	L	L	G						
9									G	L	L	(39)L	3.7H	4.1	3.9	L	L	G						
10									G	(30)L	(35)L	[38]L	(41)H	(39)L	3.7	36	L	G						
11									G	L	38H	~	L	4.0	L	L	L	G						
12									L	L	L	3.9H	41	L	L	L	A	G						
13									G	L	L	(4.0)H	L	L	(39)L	(3.6)K	L	L						
14									G	L	38	38H	(3.9)H	(39)H	3.8	3.3H	L	L						
15									L	3.9H	38	39	39H	3.8H	(3.7)H	3.6	L	L						
16									L	(35)L	36H	37	37	38H	3.8	36	L	G						
17									G	L	38H	38H	4.0	3.9H	38	3.7	3.3	L						
18									L	(37)L	39	39	40	4.0	39	L	L	L						
19									L	L	L	39	40H	40H	39	L	L	L						
20									G	L	34H	36H	3.8H	3.8H	39	3.8	3.2	G						
21									L	L	LK	3.8K	3.8K	42K	38K	(3.6)K	LK	GK						
22									L	L	37F	39H	3.9F	3.9	4.0	36	L	L						
23									L	36	3.8	3.8	(3.9)H	4.0	3.9	3.6	3.4	L						
24									L	L	37	39H	40	3.9H	39H	3.7H	35	L						
25									L	L	(4.0)L	4.0H	4.0	40H	3.9	3.7	3.5	L						
26									25	30H	3.7	38H	3.9H	3.85	3.8	3.7H	3.4	L						
27									L	(3.6)L	38	3.8H	3.8H	3.9	3.9	3.7	(35)L	L						
28								L	L	(36)L	36H	42	43	3.9	4.0	4.3H	L	L						
29																								
30																								
31																								
Median								-	-	(3.5)	3.7	39	3.9	3.9	3.9	3.6	3.4	-						
Count									2	11	19	26	25	25	24	19	7							

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 54

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

Form adopted June 1946

h'E (Characteristic), Km (Unit), February (Month), 1954

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: E.J.M., J.W.P., E.J.W.

Calculated by: E.J.M., J.W.P., S.K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									110	A	A	100	(100)^A	(100)^A	100^H	110	120^H	S						
2									S	(110)^S	110^H	(120)^A	[120]^B	(120)^B	110	110	120	S						
3									120	110	110	110	110	110	100	110	110	A						
4									110^H	110	110	100^H	100	100	110	110^H	120^H	S						
5									(130)^A	110	120	120	100	110	100	110	110	A						
6									A	A	A	100	110	100	100	100^H	100	A						
7									A	(120)^A	110	110	110	(110)^B	110^B	120	120	S						
8									S	110^H	100^H	100	100	110	110	110	(110)^A	A						
9									(130)^S	120^H	100	110	100	110	110	110	[120]^A	130						
10									(130)^S	110	110	110	110	[110]^A	110	110	120	S						
11									(110)^S	110	120	110	110^H	110	110	(110)^A	A	A						
12									A	A	A	A	100	100^H	110	(120)^A	100^H	A						
13									A	A	110	110	[110]^A	(110)^A	110	A	A	N						
14									(120)^S	A	A	A	(120)^A	100	100^H	110^H	A	A						
15									(120)^S	110	110	A	A	A	110^H	110^H	[120]^A	(140)^S						
16									A	A	110^H	A	A	(120)^A	120	(110)^S	(120)^S	S						
17									(120)^S	110	110	110	110	110	110	110	110	S						
18									A	110	110	100	100	100	110	110	120	130						
19									130	120	110	110	100	110	110	110	120	(120)^S						
20									120^H	110	110	110	110	110	100	120	120	A						
21									A	A	(110)^A_K	110^K	100^K	(120)^A_K	110^K	110^K	120^K	(130)^S_K						
22									A	110	110	110	110	110	110	110	110^H	A						
23									A	110	A	A	110	110	110	120	130	130						
24									120^H	110	110	[110]^A	110	110	110	110	110^H	120						
25									110	110	110^H	110	A	A	100^H	100^H	100	A						
26									120	110	120	110	110	120	120	(120)^H	120	130						
27									110	110	110	110	120	(120)^A	120	120	120	A						
28								120	120	120	110	110	[110]^A	110	110	110	(120)^A	130						
29																								
30																								
31																								
Median								—	120	110	110	110	110	110	110	110	120	130						
Count								1	17	21	23	23	25	26	28	27	25	9						

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 55

Form adopted June 1946

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

IONOSPHERIC DATA

foE (Characteristic), Mc (Unit), February (Month), 1954

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: F. J. M., J. W. P., E. J. W.

Calculated by: F. J. M., J. W. P., S. K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									20F	A	A	2.7	2.7	2.7	2.6H	24	21H	S						
2									S	22H	24H	2.6	[26]B	(2.6)P	25	(2.4)F	(21)F	S						
3									1.9	22H	25	27	28	2.8	2.6	2.5	21	A						
4									20H	24	26	28H	29	29	2.8	2.7H	24H	S						
5									1.8	24	27	28	(29)A	2.9	2.7	25	2.2	A						
6									A	A	A	3.0	(3.0)P	(3.0)P	3.0	2.7H	A	A						
7									A	25	2.7	27	30	3.0	[28]B	2.6	23	S						
8									1.8	2.4H	2.8H	29	2.9	29	29	2.7	(2.4)P	A						
9									1.9	2.5H	[2.7]A	2.9	29	29	29	2.7	[2.3]A	(1.9)P						
10									1.9H	2.4F	2.7	29	(2.8)S	[28]A	(27)P	26	2.3	S						
11									(19)H	2.4	27	[28]A	2.9H	2.9	27	(2.5)A	A	A						
12									A	A	A	A	2.9	29H	2.7	(25)A	(22)A	A						
13									A	A	A	26	[2.7]A	(28)A	(26)A	A	A	N						
14									(19)H	A	A	2.8	(2.9)P	28	(26)P	2.5H	A	A						
15									(20)H	[22]A	2.5H	[26]A	(2.8)H	[2.8]A	27H	2.6H	[2.2]A	(1.9)P						
16									A	A	2.5H	A	A	(2.9)P	(29)P	2.5H	23	S						
17									21	24	26	28	29	2.7	2.7	26	A	A						
18									A	2.5	2.7	28	2.9	29	2.7	2.7	[2.2]A	1.8						
19									(1.9)P	23H	26	27	28	28	28	(2.5)P	23	1.9H						
20									2.0	2.4	2.7	29	29	28	28	27	24	A						
21									A	A	2.8K	29K	3.0K	2.9K	2.9K	2.7K	24K	1.9HK						
22									A	2.5	2.7	2.9	29	(29)P	28	2.6	2.4H	A						
23									A	(2.3)A	A	A	(28)P	(28)P	2.8	[26]B	23	1.9						
24									19H	(24)S	2.7	A	A	28	2.7	2.6	24H	(1.8)A						
25									21	24	(25)H	(29)P	A	A	2.9H	29H	24	A						
26									2.1	2.4H	(2.4)S	26	2.8	28	2.6	2.6H	22	1.8S						
27									A	A	25	28	(28)P	(28)P	2.7	2.6	23	A						
28								(1.5)P	2.0	2.4H	26	(2.7)P	[28]A	29	28	2.7	(24)S	1.9						
29																								
30																								
31																								
Median								—	1.9	2.4	2.6	28	29	28	2.7	2.6	23	1.9						
Count								1	17	20	22	24	25	27	28	27	23	9						

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 56

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

Form adopted June 1946

Es (Characteristic), Mc, Km (Unit), February (Month), 1954

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: F.J.M., J.W.P., E.J.W.

Calculated by: F.J.M., J.W.P., S.K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	E	E	E	E	30/110	E	E	E	44Y/100	55/100	48/100	G	24/100	25/100	G	G	G	G	E	E	E	E	E	E
2	E	E	E	E	E	E	E	E	G	G	G	2.0/100	(22)B/100	G	G	G	G	2.0/100	E	E	E	E	E	E
3	E	E	E	40Y/100	E	51/110	26/110	E	G	G	G	G	G	G	G	G	G	1.9/130	E	E	E	E	E	23/110
4	2.3/110	2.5Y/110	39/100	E	E	E	E	58Y/110	G	G	G	G	G	G	G	G	G	G	E	E	E	E	E	E
5	E	23/100	E	E	E	E	E	E	22/110	69Y/110	G	G	35/110	G	G	G	G	20/110	E	E	E	E	E	E
6	E	E	E	E	E	E	23Y/110	4.3Y/100H	3.7/100	64/100	66/100	G	33/100H	33/110	G	27/120	2.5/110	2.3/100	33/100	68/100	78/100	44/100	45/100	49/100
7	58/100	4.9/100	45/100	33/110	E	E	E	3.5/110	100/110	7.0F/110	78Y/110	G	G	G	G	G	G	G	E	E	39/110	2.9/100	3.0/100	32/100
8	2.8/100	33/100	22/100	2.3/100	E	E	E	E	G	G	G	G	G	G	G	G	20/100	29/100	24Y/120	E	E	E	E	2.2/110
9	E	E	E	E	E	E	E	E	G	22/110	3.7/110	G	G	G	G	2.7/100	36Y/100	G	E	E	E	E	E	E
10	E	E	E	41Y/110	E	E	E	E	G	G	G	G	G	2.8/110	G	G	G	22Y/30	30/100	2.6/100	22/100	E	E	E
11	E	E	E	E	E	E	23Y/110H	24/110	G	47Y/100	23/110	3.0/130	G	3.3/130	3.0/120	28/110	3.0Y/100	3.5/100	23Y/100	22/100	E	E	E	2.7Y/130
12	E	32/100	23/120	26Y/120	24Y/120	2.7/120	2.4/120	2.4/110	34/110	3.7/110	39/110	38Y/110	G	G	G	4.7Y/100	42/120	34/100	66H/100H	24/100	24/100	23Y/100	E	E
13	2.3/110	28Y/110	23/110	3.2/110	30/120	3.0/110	37/110	23/110	23Y/120H	3.3/120	42/120	30/130	42Y/110	3.1/110	4.4/120	3.7/110H	3.4Y/110H	G	E	2.7/110	23/100	E	E	24Y/110
14	22/100	E	E	2.7Y/100	E	3.6Y/110	25Y/120	E	G	36Y/110H	6.6/110	2.5/100	26/100	G	G	G	22/120	1.9(140)S	E	E	E	E	E	E
15	E	E	E	E	E	E	E	E	G	24/110	25/110	31Y/110	26/100	2.8/120	G	G	23/110	G	E	E	E	E	E	E
16	E	E	E	E	E	E	E	E	2.4/120H	37Y/120	27/120	48/100	48/100	26/100	G	G	G	2.0/120	E	E	E	E	E	E
17	E	E	E	E	E	E	E	2.6Y/120	G	G	G	G	G	G	G	G	24/110	1.7/120	E	1.9/110	E	E	E	E
18	E	E	E	E	E	E	E	3.5/110	21/120	100Y/110	G	G	G	G	G	1.8/100	23/100	22/130	E	3.4Y/110	E	E	E	E
19	28Y/110	E	E	E	E	E	E	E	G	G	G	G	G	G	G	2.2/100	66Y/100	G	E	2.1/110	E	25/110	24/110	E
20	E	E	E	E	24/110	22/110	E	E	G	G	G	G	G	G	G	G	G	1.8/100	E	E	E	37/110	E	E
21	E	E	E	E	E	E	E	E	21/130	34Y/110	28/120	G	G	2.5/100	G	G	G	G	1.9/100	E	E	E	E	E
22	E	E	E	E	E	E	E	E	2.3/120	31/120	G	G	G	G	G	G	G	27/120	E	E	E	E	E	E
23	E	E	E	E	E	E	E	E	2.0/120	33/120	38Y/110	38/110	G	G	G	4.3Y/100	G	G	2.0/120	35/110	29/110	E	E	E
24	E	E	E	E	E	22/110	E	E	G	G	G	46/110	3.0/120	31/120	28/120	G	G	22/120	E	E	E	E	E	E
25	E	E	E	E	E	E	E	E	G	G	G	G	31/100	38Y/100	G	G	G	20Y/130	E	E	E	E	E	E
26	E	E	E	E	E	E	22/110	1.7/120	G	G	1.9/110	G	G	G	G	22/120	23/130	G	E	E	E	E	23/130	31/110
27	2.2/120	E	2.1/120	E	E	70Y/130	E	1.3/110	2.6/130	36/120	2.7/130	G	G	25/120	G	G	2.5/130	(1.9)S/120	E	E	E	E	E	E
28	E	E	E	E	E	E	E	G	G	G	G	G	75H/100H	G	G	G	28H/120H	34/130	25/120	E	E	E	E	E
29																								
30																								
31																								
Median	**	**	**	**	**	**	**	**	**	28	**	**	**	**	**	**	**	19	**	**	**	**	**	**
Count	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28

** MEDIAN fEs LESS THAN MEDIAN foE, OR LESS THAN LOWER FREQUENCY LIMIT OF RECORDER

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 57

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

(M1500)F2 (Characteristic), ______ (Unit), February (Month), 1954

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Scaled by: F.J.M., J.W.P., E.J.W.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

Calculated by: F.J.M., J.W.P., S.K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.2F	(2.5)F	2.1F	F	F	2.2	2.3	2.4	2.5	(2.5)S	2.2	2.1	2.0	2.2	2.2	2.3	2.5	2.2	2.2	2.1	2.0F	2.1	2.0SF	2.1F
2	(2.1)JF	(2.3)F	(2.1)F	F	(2.1)F	2.2	2.2F	2.3	2.6	2.5	2.5	2.3	(2.3)P	2.4	2.3	2.4	2.3	2.5	2.2S	2.2	2.3F	(2.2)F	(2.1)PF	2.0
3	2.1F	2.1F	2.3F	2.2F	2.0F	AS	F	2.3F	2.4	2.4	2.5	2.4	2.3	2.3	2.4	2.4	2.4	2.4	(2.5)S	2.1F	2.4	(2.4)S	S	F
4	FS	(2.2)FS	FS	F	FS	(2.2)PS	(2.3)FS	(2.4)F	2.6	2.4	2.4	2.4	2.5	2.4	2.5	2.2	2.5	2.6Z	2.4	2.6	2.3F	2.2F	1.9F	2.1F
5	(2.1)JF	FS	2.1F	(2.0)PF	(2.0)PF	(2.3)PF	(2.2)PF	2.3F	2.5	2.4	2.5	2.3	2.5	2.3	2.3	2.3	2.4	2.4	2.4	2.3	2.4	2.2	2.2F	(2.1)F
6	F	(2.0)F	(2.3)F	(2.2)F	2.2F	2.2F	2.4F	2.3	2.6	(2.4)H	2.5	2.4	2.5	2.5	2.4	2.4	2.6	2.5F	2.2F	(2.2)A	A	A	A	A
7	A	A	A	(2.2)F	2.1	2.3	2.4	2.4	A	2.5	(2.4)JH	2.3	2.5	2.5	2.3	2.3	2.4	2.4	2.4	2.2	2.3	2.2	S	2.0
8	2.0	(2.3)S	2.3F	2.3	2.3	2.5	(2.3)S	(2.4)JH	2.6	(2.4)H	2.5	2.3	2.5	(2.5)S	(2.5)JH	2.2	2.3	2.5	2.4	2.3	2.2	2.3FS	2.1	2.1
9	1.9	2.1	2.2	2.2	2.2F	2.4	(2.3)FS	2.4	2.6	2.6	2.6	2.5	2.4	2.4	2.4	2.5	2.5	2.6	2.3F	2.4F	2.1F	2.0F	(2.0)FS	(2.0)F
10	2.1F	2.2F	2.1F	2.1F	2.1F	2.3F	2.3	2.4	2.2	(2.6)JS	2.5	2.5	2.3	2.1H	2.3	2.3	2.4	2.5	2.4	2.2F	2.2	2.0	2.1	2.0
11	2.1	(2.1)S	(2.1)S	2.3	2.2	2.3	(2.3)S	2.2	2.6	2.4	2.5	2.3	2.4	2.2	2.3	(2.3)JS	2.3	2.4	2.3	2.3	2.1	2.2	2.1	(2.0)S
12	(2.0)FS	(2.0)FA	2.2	2.1	2.2	2.3	2.3	2.4	2.6	2.4	2.6	2.3	M	2.4	2.5	2.4	2.5	2.5	2.5	2.0	2.2	2.2	(2.1)JS	2.1
13	2.1	2.1F	(2.2)FS	(2.3)PF	FS	(2.1)PF	(2.2)PF	2.1	2.5	2.6	(2.7)S	(2.4)PF	2.2	2.3	2.5	2.3F	(2.3)PF	2.5	(2.6)S	(2.5)PF	2.3F	(2.4)F	(2.4)PF	FS
14	F	(2.2)F	(2.2)F	(2.2)F	(2.1)F	2.3F	(2.3)F	2.3F	2.5	2.5	2.4	2.5	2.3	2.3	2.3	2.4	2.4	2.5	2.3	2.2	2.1	2.1	2.2	2.3F
15	2.2F	2.0F	2.0F	2.1	2.1	2.4	2.4FS	2.4	2.1	(2.0)H	2.1	1.8	2.2	2.2	2.0	2.3	2.3	2.3	2.2	2.2	2.1	2.0	2.2	2.1
16	2.0	2.1	2.0	2.2F	(2.2)F	2.1F	2.2F	2.3	2.2	2.2	G	2.2	2.1	2.3	2.1	2.3	2.4	2.4	2.1	2.1	2.0	2.	2.0	2.0
17	2.0	2.1	2.2	2.2	2.1	2.0F	(2.2)PS	2.3F	2.5	2.4F	2.3	2.2	2.3	2.3	2.2	2.2	2.3	2.3	2.3	(2.3)F	(2.2)S	(2.2)F	(2.3)F	F
18	FS	FS	FS	FS	F	F	E	2.4	2.4	2.5	2.3	2.2	2.4	2.3	2.2	2.3	2.3	2.4	2.5F	2.2F	2.3	2.3F	(2.1)F	(2.0)F
19	FS	F	(2.0)F	(1.8)F	(1.9)F	(2.0)F	(2.2)F	(2.3)PS	2.5	2.4	2.3	2.4	(2.2)H	2.4	2.4	2.5	2.4	2.4	2.3	2.2	2.3	2.3	2.2	2.2F
20	(2.1)FS	(2.1)FS	2.1	2.1	2.0	2.2	2.4	2.4	2.5	2.5	2.6	2.3	2.4	2.3	(2.3)H	2.4	2.4	2.4	2.4	2.2	2.3	2.2	2.0	2.1
21	2.0	2.0	2.1	(2.0)F	2.1	2.2F	(2.3)S	2.4	2.2	2.2	2.3K	2.1K	2.0K	2.0K	2.0K	2.1K	2.3K	2.3K	2.3K	2.1K	(2.0)SK	(2.0)F	(1.8)SF	(2.0)S
22	(2.0)F	(2.1)FS	(2.4)F	(2.0)F	(2.0)F	2.2	2.1	2.4F	(2.1)FS	(2.2)F	2.1F	2.1F	2.2	2.1	2.3	2.2	2.3	2.4	(2.3)FS	2.2	2.2	(2.3)FS	(1.9)FH	F
23	F	(2.0)F	FS	FS	E	E	E	2.3	(2.1)SF	2.3F	2.3	2.3	2.4	2.3	2.2	2.3	2.3	2.3F	2.3	2.4	2.1	2.0F	2.1F	FS
24	S	S	1.9	1.9	(1.9)S	2.0	(2.2)S	2.5	2.1	(2.3)H	2.3	2.0	1.9	2.4	2.4	2.2	2.2	2.3	2.3	2.2	2.3	2.4	S	(2.1)S
25	S	S	S	(2.1)S	(2.1)F	(2.1)F	(2.3)F	(2.4)SH	2.6	(2.3)FS	2.3	2.2	2.1	2.2	2.4	2.2	2.3	2.4	2.4	2.3	2.2	(2.0)F	2.0F	2.0F
26	(2.0)F	(1.9)F	2.0F	(2.0)F	(2.0)F	(2.1)FS	S	2.3F	2.3	2.3H	1.8	(1.8)F	1.95	2.0	1.8	2.0	2.1S	2.4	2.1	2.1	2.15	S	S	S
27	S	(2.0)FS	(1.8)F	(2.1)JF	(2.0)PF	(1.7)F	(2.0)PF	(2.2)F	2.3FS	2.2	2.0	2.3	2.1	1.8	1.7	1.8H	2.0	2.3F	(2.2)S	2.0	1.95	2.0S	(2.0)JS	S
28	S	F	(1.9)JF	(2.0)JF	(1.9)JF	(2.0)F	2.1	2.4	2.4	2.2	2.1	2.0	2.1	2.2	2.1V	2.0H	2.3	2.3	2.3	2.1	2.0	2.1	2.2	2.3
29																								
30																								
31																								
Median	2.1	(2.1)	2.1	(2.1)	2.1	2.2	(2.3)	2.4	2.5	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.3	2.2	2.2	2.2	2.1	2.1
Count	17	21	23	23	23	25	24	28	27	28	28	28	27	28	28	28	28	28	28	28	27	26	23	20

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 58

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

(M3000)F2, ____ (Characteristic) (Unit) February, 1954 (Month)

Observed at Washington, D.C.

Lat. 38.7°N, Long. 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: F.J.M., J.W.P., E.J.W

Calculated by: F.J.M., J.W.P., S.K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(3.2)F	(3.6)F	(3.1)F	F	F	32	33	35	3.6	(36)S	33	31	3.0	32	3.2	3.3	36	32	32	3.0	3.0F	3.1	30SF	31F
2	(3.1)SF	(3.3)F	(3.1)F	F	(3.1)F	32	32F	33	3.7	35	35	34	(34)P	34	34	35	34	36	33S	3.2	33F	(3.2)F	(31)PF	30
3	3.1F	32F	3.3F	32F	30F	AS	F	33F	35	35	35	35	34	33	3.4	35	34	35	(35)S	3.1F	3.4	(34)S	S	F
4	FS	(3.2)FS	FS	F	FS	(33)PS	(33)FS	(3.5)F	3.7	35	35	3.5	36	35	35	32	36	37Z	35	35	33F	33F	2.9F	3.1F
5	(3.1)JF	FS	3.1F	(30)PF	(30)PF	(33)PF	(33)PF	33F	36	35	36	33	35	33	33	34	3.5	3.5	34	33	3.5	32	32F	(32)F
6	F	(2.9)F	(33)F	(32)F	32F	3.2F	34F	34	37	(35)H	36	35	35	36	3.5	35	37	36F	32F	(32)A	A	A	A	A
7	A	A	A	(32)F	31	34	35	35	A	36	(35)JH	33	36	35	34	33	35	3.5	35	32	33	32	S	3.0
8	3.0	(33)S	33F	3.3	33	3.6	(34)S	(35)JH	37	(34)H	36	34	36	(36)S	(35)H	32	33	36	34	33	33	33FS	31	31
9	2.9	31	32	3.2	3.2F	3.5	(33)FS	34	3.7	3.7	3.7	36	35	35	35	3.6	36	3.7	3.3F	34F	3.1F	30F	(3.0)FS	(2.9)F
10	3.1F	32F	31F	3.0F	3.1F	33F	3.3	35	32	(37)JS	36	36	3.4	3.1H	33	3.4	35	36	3.4	35F	3.2	3.0	3.1	3.0
11	3.1	(3.1)S	(3.1)S	34	32	34	(33)S	32	3.7	35	36	34	35	33	34	(34)JS	3.4	34	34	34	3.1	33	31	(3.0)S
12	(3.0)FS	(3.1)FA	32	3.1	32	33	34	3.4	37	3.5	37	34	M	34	36	3.5	36	36	36	3.0	32	32	(31)JS	32
13	32	3.2F	(3.3)FS	(3.3)PF	FS	(32)PF	(32)PF	31	3.6	3.7	(3.8)S	(34)PF	33	33	36	3.4F	(33)PF	36	(3.7)S	(36)PF	34F	(34)F	(3.5)PF	FS
14	F	(3.2)F	(32)F	(32)F	(31)F	33F	(3.3)F	34F	35	36	3.4	3.6	3.4	33	3.4	3.4	35	35	34	32	32	32	32	33F
15	3.2F	2.9F	30F	3.1	31	3.4	34FS	34	3.1	(31)H	31	27	33	32	31	33	34	34	33	33	31	3.0	33	31
16	30	3.1	30	33	(3.2)F	32F	33F	34	33	33	G	33	3.2	33	31	3.4	35	3.5	32	31	30	32	30	30
17	3.0	3.2	32	3.2	31	30F	(32)PS	34F	36	35F	33	33	33	34	3.2	3.2	3.3	3.3	3.3	(33)F	(3.2)S	(31)F	(33)F	F
18	FS	FS	FS	FS	F	F	E	35	34	36	34	33	35	34	3.3	34	3.4	35	36F	33F	33	3.3F	(31)F	(30)F
19	FS	F	(30)F	(28)F	(28)F	(3.0)F	(3.2)F	(34)PS	3.6	3.5	34	34	(3.2)H	3.4	35	36	3.5	34	3.3	33	33	34	32	3.2F
20	(3.1)FS	(31)SF	31	31	30	3.2	34	35	35	35	3.7	33	35	33	(34)H	35	35	3.5	3.5	32	33	3.2	2.9	31
21	3.0	3.0	3.1	(30)F	31	32F	(33)S	35	32	3.2	34K	31K	30K	30K	3.0K	31K	3.4K	34K	34K	31K	(3.0)SK	(31)F	(28)SF	(30)S
22	(29)F	(31)FS	(34)F	(30)F	(3.0)F	32	31	3.5F	(31)F	(32)F	32F	31F	33	3.2	34	32	3.3	34	(33)FS	32	32	(34)FS	(2.9)FH	F
23	F	(30)F	FS	FS	E	E	E	33	(3.1)SF	34F	33	33	34	3.3	33	34	33	33F	34	34	31	30F	31F	FS
24	S	S	28	29	(28)S	30	(32)S	36	31	(33)H	34	3.0	28	3.4	3.4	32	3.2	3.3	3.3	32	3.3	35	S	(31)S
25	S	S	S	(31)S	(3.2)F	(31)F	(34)F	(35)SH	37	(3.3)FS	34	3.3	32	3.3	3.4	33	34	34	3.5	33	3.3	(3.0)F	3.0F	2.9F
26	(2.9)F	(2.9)F	3.0F	(30)F	(30)F	(31)FS	S	34F	33	33H	2.7	(27)F	28S	3.0	2.7	31	31S	35	31	31	30S	S	S	S
27	S	(3.0)FS	(2.8)F	(31)JF	(30)PF	(26)F	(30)PF	(32)F	34FS	33	3.0	3.3	31	27	29	2.7H	3.0	33F	(32)S	2.9	2.8S	2.9S	(30)JS	S
28	S	F	(28)JF	(30)JF	(29)JF	(30)F	3.2	35	35	33	31	30	31	32	3.1V	3.0H	3.3	34	33	31	3.0	31	3.2	3.3
29																								
30																								
31																								
Median	31	(3.1)	3.1	(31)	3.1	32	(33)	34	3.5	35	34	33	34	33	34	34	34	35	34	32	3.2	32	3.1	31
Count	17	21	23	23	23	25	24	28	27	28	28	28	27	28	28	28	28	28	28	28	27	26	23	20

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 59

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

(M3000)F1, ______ (Unit), February, 1954 (Month)
(Characteristic)

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: F.J.M., J.W.P., E.J.W.

Calculated by: F.J.M., J.W.P., S.K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1									Q	L	L	35^H	36^H	36^H	3.7^H	39	L	L							
2									Q	41	4.1^H	39^H	37	38^H	3.8	$(38)^L$	L	Q							
3									L	L	40	39	36^H	37	37	$(40)^P$	L	L							
4									4.1	L	$(3.7)^L$	3.7	39	L	37	L	Q	Q							
5									L	4.2	3.8^H	38^H	38	$(39)^L$	L	L	L	Q							
6									Q	A	Q	38	38^H	38^H	3.8	L	L	L							
7									A	L	L	L	39	36	37	37	L	Q							
8									Q	L	L	39^H	L	L	L	L	L	Q							
9									Q	L	L	$(38)^L$	40^H	3.9	3.7	L	L	Q							
10									Q	$(41)^L$	$(38)^L$	L	$(39)^H$	$(39)^L$	38	38	L	Q							
11									Q	L	3.7^H	L	L	38	L	L	L	Q							
12									L	L	L	38^H	M	L	L	L	A	Q							
13									Q	L	L	$(39)^H$	L	L	$(39)^L$	$(40)^L$	L	L							
14									Q	L	38	39^H	$(40)^H$	$(38)^H$	39	4.1^H	L	L							
15									L	35^H	37	40	36^H	39^H	$(37)^H$	37	L	L							
16									L	$(36)^L$	39^H	3.7	39	37^H	36	37	L	Q							
17									Q	L	3.7^H	38^H	36	37^H	36	36	3.7	L							
18									L	$(37)^L$	37	37	3.6	37	35	L	L	L							
19									L	L	L	38	40^H	37^H	3.8	L	L	L							
20									Q	L	42^H	41^H	3.8^H	37^H	4.0	37	3.9	Q							
21									L	L	L^K	39^K	34^K	33^K	3.6^K	$(36)^L_K$	L^K	Q^K							
22									L	L	37^F	39^H	3.8^F	39	37	37	L	L							
23									L	36	36	39	$(38)^H$	36	34	36	37	L							
24									L	L	38	38^H	38	38^H	3.7^H	37^H	37	L							
25									L	L	$(37)^L$	39^H	40	43^H	38	37	37	L							
26									3.3	36^H	3.7	37^H	38^H	37^S	3.3	34^H	35	L							
27									L	$(37)^L$	36	3.7^H	40^H	36	36	36	$(36)^L$	L							
28								L	L	$(37)^L$	37^H	3.5	36	38	37	35^H	L	L							
29																									
30																									
31																									
Median								—	—	3.7	3.7	38	38	3.8	37	37	37								
Count									2	10	19	25	21	24	24	19	7								

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 60

Form adopted June 1946

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

IONOSPHERIC DATA

(M1500)E, ____ (Unit), February (Month), 1954
(Characteristic)

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: F.J.M., J.W.P., E.J.W.

Calculated by: F.J.M., J.W.P., S.K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									3.9^{F}	A	A	43	43	4.3	43^{H}	43	42^{H}	S						
2									S	40^{H}	4.1^{H}	4.0	B	(4.0)^{P}	43	(44)^{F}	(4.3)^{P}	S						
3									4.3	43^{H}	40	43	43	43	43	42	42	A						
4									44^{H}	42	42	42^{H}	42	43	4.1	40^{H}	38^{H}	S						
5									42	42	4.0	41	(40)^{A}	44	4.1	41	42	A						
6									A	A	A	4.0	(4.1)^{P}	(42)^{P}	4.0	42^{H}	A	A						
7									A	40	4.0	4.1	4.0	41	B	41	4.1	S						
8									40	4.1^{H}	4.1^{H}	41	4.1	42	4.2	4.3	(4.1)^{P}	A						
9									4.0	41^{H}	A	42	42	41	4.1	4.1	A	(45)^{P}						
10									4.1^{H}	4.1	4.1	41	(43)^{S}	A	(4.3)^{P}	42	42	S						
11									(42)^{H}	40	40	A	4.2^{H}	41	43	(4.3)^{A}	A	A						
12									A	A	A	A	M	41	4.2	(43)^{A}	(4.2)^{A}	A						
13									A	A	A	44	A	(43)^{A}	(4.3)^{A}	A	A	N						
14									4.2	A	A	41	(42)^{P}	43	(43)^{P}	42^{H}	A	A						
15									(4.1)^{H}	A	43^{H}	A	(42)^{H}	A	43^{H}	43^{H}	A	(42)^{P}						
16									A	A	44^{H}	A	A	(4.1)^{P}	(41)^{P}	43^{H}	42	S						
17									44	4.1	42	4.1	39	4.2	4.2	42	A	A						
18									A	4.3	4.1	40	42	4.2	43	39	A	4.2						
19									(42)^{P}	42^{H}	40	4.1	4.1	42	42	(40)^{P}	42	4.3^{H}						
20									42^{H}	42	4.1	40	41	4.3	4.1	42	43	A						
21									A	A	4.1^{K}	43^{K}	4.0^{K}	4.1^{K}	42^{K}	42^{K}	4.1^{K}	4.1^{HK}						
22									A	40	42	4.2	42	(4.1)^{P}	43	42	4.1^{H}	A						
23									A	42	A	A	(42)^{P}	(43)^{P}	41	B	41	41						
24									4.1^{H}	(4.0)^{S}	41	A	A	43	4.3	43	41^{H}	(43)^{A}						
25									4.1	4.1	(44)^{H}	(42)^{P}	A	A	4.4^{H}	4.0^{H}	41	A						
26									43	43^{H}	(43)^{S}	44	44	44	44	40^{H}	43	44^{S}						
27									A	A	44	40	(40)^{P}	(42)^{P}	41	41	43	A						
28								(4.5)^{P}	4.2	43^{H}	40	(42)^{P}	A	43	44	42^{P}	(41)^{S}	4.1						
29																								
30																								
31																								
Median								—	4.2	41	41	41	42	42	43	42	42	42						
Count								1	17	19	21	22	21	25	27	26	20	9						

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Table 61

Ionospheric Storminess at Washington, D. C.

February 1954

Day	Ionospheric character* 00-12 GCT	Ionospheric character* 12-24 GCT	Principal storms Beginning GCT	Principal storms End GCT	Geomagnetic character** 00-12 GCT	Geomagnetic character** 12-24 GCT
1	2	2			3	3
2	1	3			3	3
3	1	3			4	2
4	3	1			3	1
5	2	2			1	1
6	2	2			2	0
7	#	2			1	1
8	1	1			2	2
9	1	0			2	2
10	2	1			2	2
11	1	2			3	3
12	2	2			2	2
13	1	2			2	1
14	2	1			1	2
15	2	3			3	4
16	1	3			3	4
17	1	3			4	3
18	#	3			3	3
19	3	2			2	2
20	2	1			3	2
21	2	4	1500	----	3	4
22	1	3	----	0100	4	4
23	3	2			4	3
24	3	3			3	3
25	3	2			2	2
26	3	3			4	4
27	2	3			4	4
28	4	3			3	2

*Ionosphere character figure (I-figure) for ionospheric storminess at Washington, D. C., during 12-hour period, on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

**Average for 12 hours of Cheltenham, Maryland, geomagnetic K-figures on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

----Dashes indicate continuing storm.

#Insufficient data.

Table 62

Radio Propagation Quality Figures

(Including Comparisons with Short-Term and Advance Forecasts)

January 1954

Day	North Pacific 9-hourly quality figures			Short-term forecasts issued at:			Whole day quality index	Advance forecasts (Jp reports) for whole day, issued in advance by:		
	03 to 12	09 to 18	18 to 03	02	09	18		1-4 days	4-7 days	8-25 days
1	7	6	6	7	6	7	6	7	7	
2	6	5	(4)	7	6	6	5	7	7	
3	6	6	7	6	5	7	7	7	7	
4	5	5	6	6	6	6	5	7	7	
5	6	7	6	6	6	6	7	7	6	
6	5	5	6	6	5	6	5	6	6	
7	5	6	7	6	5	6	6	5	6	
8	5	(4)	6	5	5	6	5	5	5	
9	5	5	5	5	5	6	5	6	5	
10	(4)	5	6	6	6	6	(4)	6	6	
11	6	6	5	5	6	7	6	6	6	
12	5	5	6	6	6	6	6	6	6	
13	7	7	6	6	5	6	7	6	7	
14	5	6	6	6	6	6	6	6	7	
15	5	6	6	6	5	6	5	7	7	
16	5	5	6	6	6	7	6	6	7	
17	5	6	6	6	6	7	5	6	6	
18	6	6	6	6	6	7	7	6	6	
19	(4)	5	6	5	(4)	5	5	6	6	
20	(3)	5	6	5	(4)	6	(4)	(4)	6	
21	5	5	7	5	5	6	6	(4)	6	
22	(4)	5	6	5	5	6	5	5	6	
23	(4)	(4)	6	5	5	6	(4)	5	6	
24	(4)	5	6	5	5	6	6	6	6	
25	6	5	5	6	6	7	6	6	6	
26	6	5	6	6	5	6	6	7	7	
27	6	6	6	6	5	7	6	7	7	
28	6	6	6	6	5	6	6	6	6	
29	5	5	7	6	6	6	6	6	6	
30	5	5	7	6	6	6	6	6	6	
31	5	5	5	6	6	7	5	6	6	
Score:										
Quiet periods			P	11	11	16		13	13	
			S	14	17	11		11	12	
			U	0	1	3		3	3	
			F	0	0	0		1	0	
Disturbed periods			P	0	0	0		1	0	
			S	4	2	0		1	0	
			U	1	0	0		0	0	
			F	1	0	1		1	3	

Scales:

Q-scale of Radio Propagation Quality
- (1) - useless
- (2) - very poor
- (3) - poor
- (4) - poor to fair
- 5 - fair
- 6 - fair to good
- 7 - good
- 8 - very good
- 9 - excellent

Scoring: (beginning October 1952)
- P - Perfect: forecast quality equal to observed
- S - Satisfactory: (beginning October 1952) forecast quality one grade different from observed
- U - Unsatisfactory: forecast quality two or more grades different from observed when both forecast and observed were ≥ 5, or both ≤ 5
- F - Failure: other times when forecast quality two or more grades different from observed

Symbols:
- X - probable disturbed date

Note: All times are UT (Universal Time or GCT)

Table 63a

Radio Propagation Quality Figures
(Including Comparisons with Short-Term and Advance Forecasts)

January 1954

Day	North Atlantic 6-hourly quality figures				Short-term forecasts issued about one hour in advance of:				Whole day quality index	Advance forecasts (J-reports) for whole day; issued in advance by:			Geomagnetic K_{Ch}	
	00 to 06	06 to 12	12 to 18	18 to 24	00	06	12	18		1-4 days	4-7 days	8-25 days	Half day (1)	Half day (2)
1	6	5	7	6	6	6	7	6	6	7	7		2	1
2	6	5	7	6	6	5	7	5	6	7	7		3	(4)
3	6	6	6	6	(4)	5	6	6	6	7	7		2	2
4	6	6	7	6	6	6	7	7	6	7	7		0	0
5	6	(4)	6	6	6	6	6	7	5	6	6		0	2
6	6	5	6	6	5	5	7	6	6	6	6		2	2
7	6	5	6	6	5	5	6	6	6	5	5		1	1
8	6	6	6	5	6	5	7	6	6	5	5		3	2
9	6	6	7	6	6	5	7	7	6	5	5		2	2
10	6	5	7	6	6	6	7	6	6	6	6		2	2
11	5	5	7	6	6	5	7	6	6	6	6		2	1
12	6	6	6	6	6	6	7	6	6	6	6		2	2
13	5	5	7	6	6	5	7	7	6	6	6		3	2
14	6	5	7	6	6	6	7	6	6	6	6		1	2
15	6	5	7	6	6	6	7	6	6	6	6		2	2
16	6	6	7	6	6	6	7	6	6	6	6		2	2
17	6	6	7	7	6	6	7	7	7	6	6		1	2
18	7	6	7	7	6	6	7	7	7	6	6		2	3
19	6	5	7	5	6	5	6	6	6	7	6		(4)	3
20	6	(4)	6	5	(4)	(4)	6	6	5	7	6		3	3
21	(4)	(4)	6	5	(4)	(4)	6	6	5	7	6		3	3
22	(4)	5	6	5	(4)	(4)	6	5	5	5	7		3	2
23	(3)	(4)	6	6	5	(4)	6	5	(4)	6	7		(4)	2
24	5	(4)	6	6	5	5	6	6	5	6	7		2	1
25	5	(4)	6	6	6	6	6	6	5	6	7		1	2
26	6	5	6	6	6	6	7	6	6	6	7		1	1
27	6	6	6	6	6	6	7	7	6	6	7		1	2
28	6	6	7	6	6	6	7	7	6	6	7		2	0
29	6	6	7	6	6	6	7	7	6	7	6		2	1
30	6	6	7	6	6	6	7	7	6	7	6		1	1
31	7	6	6	7	6	6	6	6	7	7	6		2	2
Score:														
Quiet periods				P	19	16	25	16		13	11			
				S	7	9	6	15		15	16			
				U	0	0	0	0		2	3			
				F	2	0	0	0		0	0			
Disturbed periods				P	2	3	0	0		0	0			
				S	0	1	0	0		0	0			
				U	1	0	0	0		0	0			
				F	0	2	0	0		1	1			

Scales:

Q-scale of Radio Propagation Quality
- (1) - useless
- (2) - very poor
- (3) - poor
- (4) - poor to fair
- 5 - fair
- 6 - fair to good
- 7 - good
- 8 - very good
- 9 - excellent

K-scale of Geomagnetic Activity
0 to 9, 9 representing the greatest disturbance; $K_{Ch} \geqslant 4$ indicates significant disturbance, enclosed in ( ) for emphasis

Scoring: (beginning October 1952)
- P - Perfect: forecast quality equal to observed
- S - Satisfactory: (beginning October 1952) forecast quality one grade different from observed
- U - Unsatisfactory: forecast quality two or more grades different from observed when both forecast and observed were $\geqslant 5$, or both $\leqslant 5$
- F - Failure: other times when forecast quality two or more grades different from observed

Symbols:
X - probable disturbed date

Note: All times are UT (Universal Time or GCT)

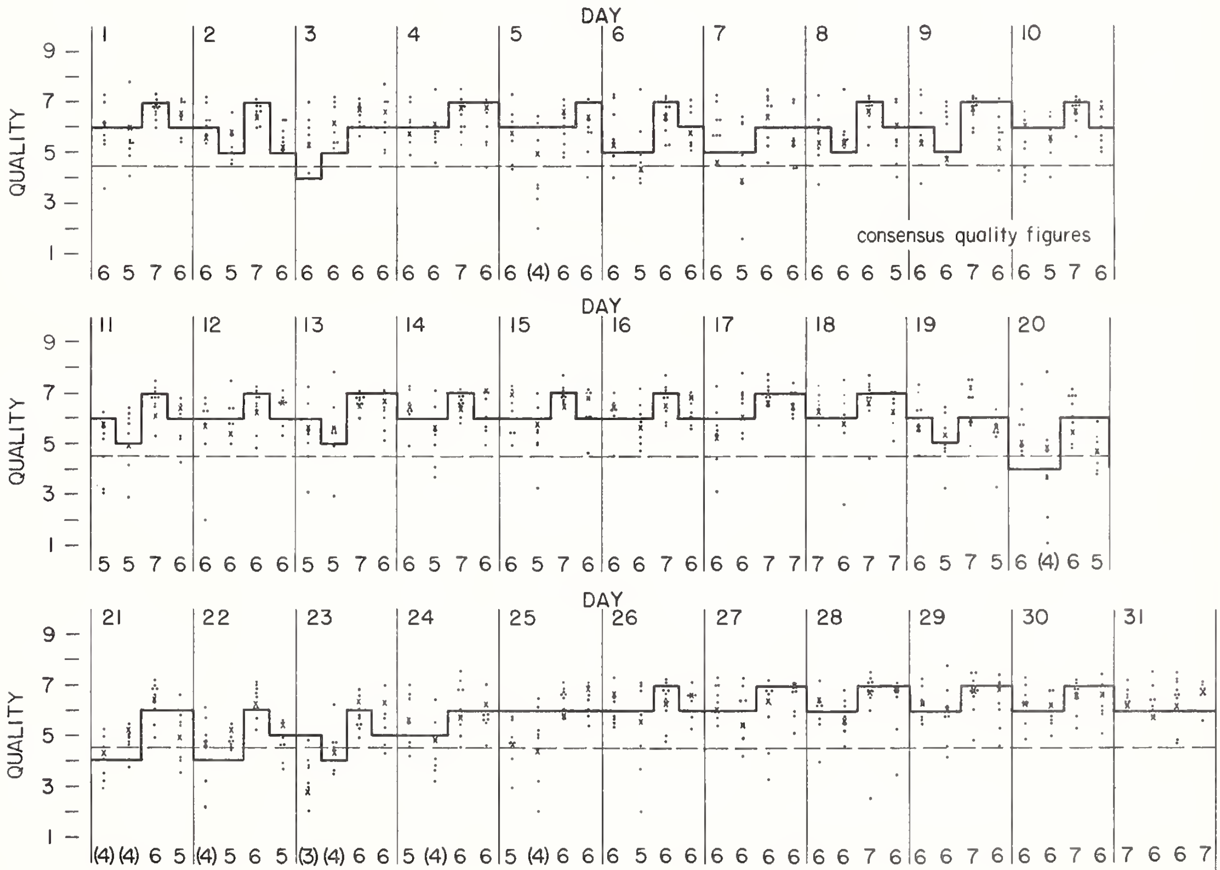
Table 63b

Short-Term Forecasts--- January 1954

— forecast

× CRPL observation (not in consensus)

• individual reports of quality (adjusted to CRPL scale)



Outcome of Advance Forecasts (1 to 4 days ahead) --- January 1954

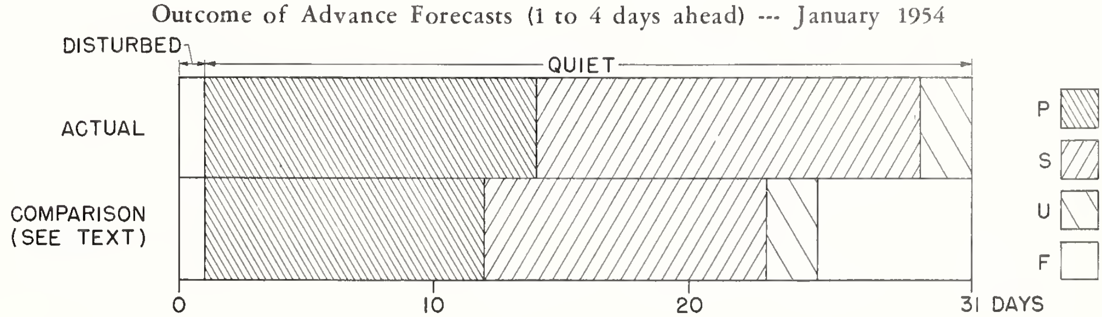


Table 64a

Coronal observations at Climax, Colorado (5303A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Feb 1.7	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	2	1	-	-	-	-	-	-	-	-	-	-	-
2.7	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.8	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X
4.7	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.7	-	-	-	-	-	-	-	-	1	2	2	3	3	2	1	1	1	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-
6.8	-	-	-	-	-	-	-	-	1	2	2	3	1	1	1	1	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	2	3	2	1	2	2	1	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.7	-	-	-	-	-	-	-	1	1	3	2	2	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.7	-	-	-	-	-	-	-	2	3	3	2	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.8	-	-	-	-	-	-	1	1	1	2	2	1	1	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.7	-	-	-	-	-	-	-	-	1	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.8	-	-	-	-	-	-	-	1	1	2	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.9	-a	-a	-a	-a	-a	-a	-a	-a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.7	-	-	-	-	-	-	-	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-
18.7	X	X	X	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.8	-	-	-	-	-	-	-	-	2	3	1	-	-	-	1	2	1	1	2	1	-	-	-	-	-	1	1	1	1	1	-	-	-	-	-	-	-
24.8	-	-	-	-	-	-	-	1	1	1	1	-	1	1	1	1	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
25.8	X	X	X	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-

Table 65a

Coronal observations at Climax, Colorado (6374A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Feb 1.7	2	3	3	2	2	2	2	1	1	1	1	3	2	2	3	6	10	6	5	4	5	5	5	5	4	4	3	2	2	1	1	1	1	1	1	1	2
2.7	3	3	3	2	2	2	1	1	1	1	2	2	1	1	6	8	8	8	5	6	6	5	5	5	5	4	3	3	2	1	1	1	2	2	2	3	3
3.8	2	2	2	1	1	1	1	1	1	1	1	1	1	1	2	2	3	5	4	5	5	5	4	5	4	X	X	X	X	X	X	X	X	X	X	X	X
4.7	2	2	1	1	-	-	-	-	1	1	1	1	1	2	2	3	2	2	3	3	3	4	5	4	3	3	3	3	2	1	1	1	1	3	2	2	2
5.7	3	2	2	1	1	1	1	1	1	1	1	2	1	1	2	3	3	3	4	8	9.	7	6	6	5	4	4	3	2	2	2	3	3	4	3	3	2
6.8	2	2	2	3	1	2	2	2	1	2	1	1	2	2	3	3	3	4	5	6	6	5	5	5	5	4	3	2	1	1	2	2	1	3	1	3	2
7.7	3	3	3	2	2	2	2	2	3	2	3	3	3	3	3	3	4	6	9	9	7	5	5	5	6	6	5	4	2	1	1	1	2	3	2	3	3
8.7	3	3	3	2	2	1	-	1	1	1	1	3	5	3	4	4	4	5	6	5	4	3	3	4	5	5	5	4	2	2	3	3	2	3	3	3	3
9.7	3	3	3	3	2	2	2	2	2	2	3	5	4	4	3	5	6	7	8	8	6	5	3	3	4	4	5	5	3	3	1	1	1	2	3	2	2
10.8	2	2	1	1	1	1	1	1	1	1	1	2	4	3	3	3	4	4	3	3	3	3	3	2	2	3	3	3	2	1	1	1	1	2	1	2	3
11.7	2	2	2	2	1	1	1	1	1	1	2	2	2	3	3	3	3	4	4	4	3	3	2	2	3	2	2	2	1	1	1	1	1	2	2	2	3
12.8	2	2	1	1	1	1	1	1	1	2	2	2	1	2	2	3	3	5	6	4	4	5	4	4	4	4	3	2	1	1	1	1	1	2	2	2	3
15.9	-a	-a	-a	-a	-a	-a	-a	-a	-	3	3	4	5	4	4	4	3	4	5	7	5	4	4	4	3	4	3	1	1	1	1	1	2	2	2	2	2
17.7	3	3	3	2	2	1	1	1	2	2	3	5	5	4	4	4	5	5	5	5	5	5	5	5	5	5	3	2	1	1	1	1	3	2	2	3	2
18.7	X	X	X	1	1	1	-	-	-	-	-	2	3	3	3	3	2	3	4	4	3	3	3	3	4	3	3	2	1	1	1	1	1	2	1	2	2
21.8	3	2	2	2	1	1	1	1	1	2	5	6	6	5	3	4	3	4	5	3	3	3	3	4	4	3	3	2	1	1	1	2	2	2	2	2	2
24.8	2	4	3	3	3	3	2	2	1	2	4	4	3	3	3	5	5	6	6	6	5	7	6	5	6	6	5	3	3	3	2	2	2	2	2	3	2
25.8	X	X	X	3	2	1	1	1	1	2	2	3	3	3	4	4	5	5	5	5	6	5	5	5	5	5	4	3	3	2	2	2	2	2	3	3	3
28.7a	2	3	2	?	1	1	1	1	1	1	1	1	2	2	3	3	4	3	3	2	2	3	3	3	4	3	2	1	1	1	1	2	2	2	2	2	2

Table 66a

Coronal observations at Climax, Colorado (6702A), east limb

The 6702A coronal line was not visible on any of the observation dates in February at the position angles indicated for the 5303A line.

Table 64b

Coronal observations at Climax, Colorado (5303A), west limb

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Feb 1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1	-	-	-	-	-	-	-	-	-
2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-
3.8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-
4.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	2	2	2	1	-	-	-	-	-	-
6.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	1	1	1	-	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	1	2	1	1	1	-	-	-	-	-	-	-
8.7	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	1	1	1	1	1	-	-	-	-	-	-	1	-	-	-	-	-	-
9.7	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	1	1	1	-	-	-	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-
10.8	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.7	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-
12.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1	1	-	-	-	-	1	2	1	1	-	-	-	-	-	-	-	-	-
15.9b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	2	1	1	1	1	-	-	-	-	-	-	-
18.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	X
21.8a	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	-	-	-	-	-	-	-	-
24.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	-	-	-	-	-	-	-
25.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	X
28.7a	-	-	-	-	-	-	-	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 65b

Coronal observations at Climax, Colorado (6374A), west limb

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Feb 1.7	2	2	2	2	2	2	1	1	1	2	2	4	5	4	4	4	4	4	3	5	4	3	3	3	4	4	3	2	1	1	1	1	1	2	2	2	2
2.7	3	2	2	3	2	2	1	1	2	2	3	5	6	6	6	6	6	6	6	6	6	5	5	5	6	4	3	2	1	1	1	1	1	3	2	4	3
3.8	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2	2
4.7	2	2	2	2	2	2	2	2	2	3	3	3	4	3	3	4	4	3	5	5	5	5	5	5	4	4	2	2	1	1	1	1	2	2	2	2	2
5.7	2	3	3	3	3	3	3	2	2	4	3	3	4	4	4	5	7	6	5	5	5	3	3	3	6	6	4	2	1	1	1	1	1	2	2	2	3
6.8	2	3	3	3	2	1	1	2	2	3	3	3	3	4	4	5	6	4	3	2	2	2	3	4	5	3	1	1	1	1	1	1	1	1	2	2	2
7.7	3	2	2	2	1	1	1	1	1	2	2	2	1	3	5	4	4	4	5	3	3	3	4	4	4	4	3	2	1	1	1	3	3	3	3	3	3
8.7	3	3	3	3	3	2	2	2	2	3	2	2	3	4	5	5	5	5	6	5	5	4	4	4	3	4	4	3	1	2	2	2	3	3	3	3	3
9.7	2	3	3	2	3	3	3	1	1	2	1	1	3	5	5	6	6	5	5	5	5	5	4	3	4	4	5	4	2	2	2	3	2	2	4	3	3
10.8	3	2	2	2	2	2	2	1	1	2	3	3	3	5	5	5	5	5	5	4	4	4	4	4	4	3	3	2	2	2	2	2	3	2	2	2	2
11.7	3	2	2	2	1	1	1	1	1	1	2	3	3	4	5	5	4	4	5	4	4	4	4	3	3	3	2	1	1	1	1	1	1	2	3	3	2
12.8	3	3	2	2	1	1	1	1	1	2	3	3	3	3	4	3	3	5	4	4	4	5	4	3	3	2	1	1	1	1	1	1	1	1	1	2	2
15.9b	2	2	2	2	2	2	2	1	3	2	2	4	4	4	4	4	5	5	5	4	5	6	4	3	2	2	2	2	2	2	2	2	2	2	2	-	-
17.7	2	3	3	2	2	1	1	1	1	3	3	4	4	5	6	6	5	5	4	4	4	4	4	3	2	2	2	2	2	2	2	2	2	3	3	2	3
18.7	2	2	2	2	2	1	1	1	1	1	1	1	2	3	3	4	4	4	3	3	3	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	X
21.8a	2	3	3	2	2	1	1	1	1	1	1	4	5	5	5	5	5	5	6	5	5	5	4	4	4	4	4	2	2	2	1	1	1	2	2	2	3
24.8	2	2	2	2	2	2	2	2	2	2	2	3	4	3	3	5	7	7	8	8	6	5	5	4	5	6	5	3	2	1	2	2	2	2	3	3	2
25.8	3	3	2	2	2	2	2	2	3	4	5	4	4	4	5	5	6	6	6	5	5	3	4	5	4	3	2	2	2	2	2	2	3	3	3	3	X
28.7a	2	2	2	2	2	1	1	1	1	2	3	4	3	3	3	3	3	3	3	3	4	2	2	3	4	3	2	2	1	1	1	1	1	1	1	1	2

a indicates low weight S90 through N90
b indicates low weight S55 through N90

Table 66b

Coronal observations at Climax, Colorado (6702A), west limb

The 6702A coronal line was not visible on any of the observation dates in February at the position angles indicated for the 5303A line.

Table 67a

Coronal observations at Sacramento Peak, New Mexico (5303A), east limb

Date GCT	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Feb 2.7	-	-	-	-	-	-	-	2	3	3	2	3	3	3	4	3	2	2	3	2	-	-	-	-	-	-	2	2	3	3	2	2	-	-	-	-	-
3.7	-	-	-	-	-	-	-	2	2	3	4	3	3	4	4	3	2	2	-	-	2	2	2	3	2	2	2	3	3	3	3	2	-	-	-	-	-
4.7	-	-	-	-	-	-	-	2	2	3	3	3	4	4	5	4	2	3	3	2	2	2	2	2	3	3	2	3	2	4	4	2	-	-	-	-	-
5.7	-	-	-	-	-	-	-	2	2	3	3	2	3	3	2	2	2	2	2	3	3	3	2	2	2	2	4	2	2	3	-	-	-	-	-	-	-
6.9a	-	-	-	-	-	-	-	2	2	3	2	2	3	4	4	4	2	3	2	2	3	3	3	4	4	3	2	3	3	2	2	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	2	2	3	4	4	4	4	5	3	2	2	-	-	-	-	2	2	2	3	2	3	3	3	3	2	2	-	-	-	-
8.7	-	-	-	-	-	-	-	2	5	5	4	4	3	2	2	3	3	2	2	2	3	2	2	3	2	3	3	3	3	2	2	-	-	-	-	-	-
9.9	-	-	-	-	-	-	-	2	3	4	3	3	3	3	3	3	2	3	2	2	-	-	2	3	2	2	2	2	2	-	-	-	-	-	-	-	-
10.8a	-	-	-	-	-	-	-	2	2	3	3	2	2	3	3	2	2	2	3	3	2	3	3	2	3	3	2	3	3	3	3	2	-	-	-	-	-
11.7	-	-	-	-	-	-	-	3	3	4	4	3	3	3	2	3	2	2	2	2	3	2	2	2	2	3	4	3	2	2	2	2	-	-	-	-	-
13.7	-	-	-	-	-	-	-	2	3	3	3	2	2	3	3	2	2	2	-	-	-	-	-	-	2	3	2	3	2	3	-	-	-	-	-	-	-
14.7	-	-	-	-	-	-	-	2	3	3	4	3	4	3	3	2	2	3	3	3	3	3	2	-	-	-	-	-	-	3	3	2	-	-	-	-	-
16.7a	-	-	-	-	-	-	-	-	-	2	2	2	3	2	-	-	-	-	-	2	5	3	2	2	2	3	-	-	-	-	-	-	-	-	-	-	-
17.8a	-	-	-	-	-	-	-	.2	2	3	3	3	3	2	3	2	2	2	3	3	4	2	-	-	-	-	2	4	3	3	2	2	3	-	-	-	-
18.7a	-	-	-	-	-	-	-	-	2	2	3	3	2	3	2	-	-	-	-	-	-	-	2	2	3	2	3	4	3	4	2	-	-	-	-	-	-
19.8a	-	-	-	-	-	-	-	-	-	2	3	2	2	2	2	3	3	3	4	4	3	3	3	3	2	2	3	2	-	-	-	-	-	-	-	-	-
20.7	-	-	-	-	-	-	-	2	2	3	4	3	2	-	3	2	2	2	2	4	3	2	2	2	2	2	2	3	4	4	3	2	-	-	-	-	-
21.7	-	-	-	-	-	-	-	2	3	4	3	2	2	2	3	3	3	3	3	2	2	2	3	3	4	3	3	4	4	5	4	3	2	-	-	-	-
22.8	-	-	-	-	-	-	-	2	3	3	5	3	2	3	3	3	3	3	-	-	-	-	2	3	3	3	3	4	4	3	3	2	-	-	-	-	-
24.7	-	-	-	-	-	-	-	-	-	2	2	2	3	2	2	2	-	-	-	-	-	2	2	3	3	3	3	3	3	2	2	2	-	-	-	-	-
25.7	-	-	-	-	-	-	-	3	2	2	3	2	2	2	3	3	2	2	2	2	3	3	3	4	4	3	2	3	3	2	-	-	-	-	-	-	-
26.7a	-	-	-	-	-	-	-	-	-	-	2	2	3	3	2	3	3	3	2	3	3	3	2	2	2	2	2	3	4	4	4	2	-	-	-	-	-
28.7	-	-	-	-	-	3	2	2	3	3	2	2	2	-	2	2	2	2	2	2	3	2	2	3	3	3	4	3	2	2	2	3	2	-	-	-	-

Table 68a

Coronal observations at Sacramento Peak, New Mexico (6374A), east limb

Date GCT	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Feb 2.7	4	4	3	4	4	3	2	2	2	2	-	3	3	2	3	8	11	13	11	8	7	6	10	8	9	9	7	5	4	2	2	3	2	2	3	2	2
3.7	3	3	4	3	4	5	4	5	5	4	3	2	2	3	5	8	13	14	13	11	11	12	13	14	13	11	11	7	4	3	3	3	4	3	4	6	4
4.7	3	4	4	3	2	3	2	3	3	2	3	3	2	2	5	7	8	11	9	9	12	14	15	14	14	13	11	10	5	3	2	3	3	2	3	4	3
5.7	3	2	2	2	2	2	2	2	3	2	3	2	-	2	3	4	4	5	6	8	11	10	10	9	9	10	7	5	3	2	2	2	3	2	4	5	3
6.9a	-	2	2	2	3	2	3	2	2	3	3	2	3	4	4	3	3	4	3	5	8	9	8	7	6	6	5	3	2	2	2	2	2	-	2	3	3
7.7	3	3	2	2	2	2	2	2	2	3	3	2	3	4	3	5	4	6	11	12	11	10	8	8	7	7	6	4	3	2	2	2	2	2	3	3	2
8.7	5	4	3	4	2	3	3	2	3	4	3	5	8	6	5	6	5	9	14	13	11	9	8	6	6	6	5	5	3	2	2	2	3	2	4	3	4
9.9	3	3	4	3	4	2	3	2	3	3	-	3	5	5	4	4	5	11	12	13	12	11	10	8	5	7	6	4	3	3	2	3	3	2	5	2	3
10.8a	3	2	3	2	-	-	-	-	2	-	-	-	2	3	3	3	3	4	5	4	5	5	4	4	2	5	4	5	3	3	2	3	2	2	3	-	-
11.7	4	3	4	4	3	2	2	2	3	3	4	5	4	4	5	5	8	11	12	11	10	8	7	6	4	7	5	5	3	2	-	3	2	2	-	2	3
13.7	2	2	2	3	2	2	2	2	-	2	-	3	2	2	5	6	7	8	7	8	7	5	7	7	5	6	4	4	4	3	2	-	2	2	3	4	3
14.7	3	3	3	4	3	3	3	3	2	2	4	4	5	6	7	8	11	10	9	8	7	8	7	6	9	6	6	8	4	3	-	-	2	3	2	4	3
16.7a	3	-	2	3	4	3	-	-	-	-	2	3	2	4	4	4	4	5	5	4	5	6	5	4	4	4	5	3	-	-	-	2	2	3	3	3	2
17.8a	3	2	3	2	2	3	2	-	-	2	-	3	4	5	4	4	6	7	8	5	6	4	5	3	6	4	5	3	2	-	2	-	-	2	3	-	-
18.7a	2	2	3	2	3	3	2	-	3	-	3	4	5	6	5	5	6	3	2	3	4	4	5	5	5	6	4	3	2	3	2	2	3	2	3	2	-
19.8a	2	2	2	2	2	2	3	-	-	3	3	4	8	7	6	5	3	4	4	4	5	3	4	2	3	4	3	4	2	3	-	-	2	2	-	-	-
20.7	2	3	2	2	3	3	3	2	3	3	5	10	11	11	9	6	7	6	5	8	7	6	6	5	5	7	5	4	3	2	2	2	4	3	3	2	3
21.7	3	3	3	3	4	3	2	2	2	2	6	12	11	9	8	7	8	11	13	10	7	6	5	6	8	8	7	6	2	2	3	2	3	-	4	2	3
22.8	2	3	2	3	3	2	2	2	-	3	4	6	8	4	4	6	8	7	7	5	4	6	6	7	13	12	5	2	2	3	3	2	2	2	3	3	2
24.7	2	2	2	-	-	-	2	2	2	-	3	4	4	3	2	5	8	7	7	5	4	5	6	4	4	4	3	2	-	-	2	-	2	2	2	2	2
25.7	3	2	3	3	2	2	3	3	3	2	4	5	6	5	5	9	9	8	9	8	9	8	8	7	7	8	6	5	3	4	2	3	3	3	3	3	3
26.7a	3	2	2	2	3	2	2	2	3	3	4	5	4	5	5	8	9	8	5	5	4	4	4	4	5	6	5	4	3	2	-	-	3	3	3	3	3
28.7	3	3	4	3	3	4	5	4	5	6	6	7	7	11	16	15	14	14	11	8	7	12	12	11	10	5	4	3	2	2	3	3	3	4	4	3	3

Table 69a

Coronal observations at Sacramento Peak, New Mexico (6702A), east limb

The 6702A coronal line was not visible on any of the observation dates in February.

Table 67b

Coronal observations at Sacramento Peak, New Mexico (5303A), west limb

Date	Degrees south of the solar equator																			Degrees north of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0°	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Feb 2.7	-	-	-	-	-	-	-	-	-	3	3	2	2	2	2	3	3	2	2	2	3	3	3	4	3	2	3	2	3	3	2	2	-	-	-	-	-
3.7	-	-	-	-	-	-	-	3	2	2	3	2	3	2	3	3	2	3	3	3	4	4	3	3	3	2	4	5	5	4	3	3	2	2	-	-	-
4.7	-	-	-	-	-	-	-	2	2	3	3	2	3	2	2	3	3	2	2	3	3	3	3	3	2	3	4	4	3	3	4	4	3	2	-	-	-
5.7	-	-	-	-	-	-	-	2	2	3	3	2	3	2	2	2	3	3	2	2	3	2	3	3	3	2	2	3	4	4	3	4	2	2	-	-	-
6.9a	-	-	-	-	-	-	-	-	-	2	3	3	3	2	2	2	2	2	3	3	2	3	3	2	2	2	2	3	3	3	3	-	-	-	-	-	-
7.7	-	-	-	-	-	-	-	-	-	2	2	2	3	3	3	2	2	2	2	3	3	3	3	2	3	2	2	3	3	3	3	2	-	-	-	-	-
8.7	-	-	-	-	-	-	-	2	2	3	3	3	2	2	2	3	2	3	2	3	3	2	3	3	2	2	-	3	3	4	4	3	-	-	-	-	-
9.9a	-	-	-	-	-	-	-	-	-	2	2	2	2	3	3	3	2	-	-	2	3	2	2	2	3	2	2	-	-	-	-	-	-	-	-	-	-
10.8a	-	-	-	-	-	-	-	3	3	3	3	3	2	3	4	4	3	3	2	2	3	2	2	-	-	3	3	3	4	4	3	3	2	3	-	-	-
11.7	-	-	-	-	-	-	-	2	2	3	3	3	3	3	2	3	2	3	3	2	3	2	3	3	3	4	4	3	4	3	2	-	-	-	-	-	-
13.7	-	-	-	-	-	-	-	2	3	3	3	2	3	2	2	2	2	2	-	-	-	-	-	2	3	2	2	2	2	3	-	-	-	-	-	-	-
14.7	-	-	-	-	-	-	-	2	2	3	3	2	3	2	3	2	2	-	-	-	-	-	-	2	3	3	4	2	2	-	-	-	-	-	-	-	-
16.7a	-	-	-	-	-	-	-	-	-	2	3	2	2	3	3	2	2	2	2	3	3	2	2	2	2	2	2	3	-	-	-	-	-	-	-	-	-
17.8a	-	-	-	-	-	-	-	2	2	2	3	3	3	3	2	2	2	2	2	2	3	3	3	3	3	3	3	3	2	3	2	-	-	-	-	-	-
18.7	-	-	-	-	-	-	-	-	2	2	3	2	2	-	-	-	-	2	3	2	2	2	3	3	2	3	3	3	2	2	3	2	-	-	-	-	-
19.8a	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	2	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.7	-	-	-	-	-	-	-	-	2	2	3	2	2	2	3	3	3	2	2	2	-	3	3	3	4	4	3	5	5	4	2	2	-	-	-	-	-
21.7	-	-	-	-	-	-	-	-	-	3	4	4	3	2	2	2	3	2	2	3	3	2	3	3	4	4	5	5	5	3	2	2	-	-	-	-	-
22.8	-	-	-	-	-	-	-	-	-	2	2	3	2	2	2	2	2	3	3	2	2	2	2	2	3	3	4	4	5	5	3	3	2	-	-	-	-
24.7	-	-	-	-	-	-	-	2	2	3	2	2	3	3	2	2	2	2	3	3	3	2	3	3	3	4	4	5	4	4	3	2	-	-	-	-	-
25.7	-	-	-	-	-	-	-	-	2	2	2	2	3	3	2	3	3	2	2	2	2	3	3	2	3	2	3	3	3	3	2	2	-	-	-	-	-
26.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	2	3	3	2	2	2	2	3	2	2	3	3	2	-	-	-	-	-	-	-
28.7	-	-	-	-	-	2	2	2	3	2	2	3	3	2	2	3	2	2	2	2	3	3	2	3	2	4	4	3	3	3	2	2	-	-	-	-	-

Table 68b

Coronal observations at Sacramento Peak, New Mexico (6374A), west limb

Date	Degrees south of the solar equator																			Degrees north of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5	0°	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1954																																					
Feb 2.7	2	2	2	2	2	3	3	2	2	5	7	8	8	8	7	8	7	6	6	7	6	6	5	6	6	8	7	2	-	-	2	-	2	2	2	3	4
3.7	4	4	3	2	3	3	3	2	-	2	3	6	8	7	7	8	10	11	9	10	11	10	9	7	8	9	9	5	2	2	-	2	3	4	4	4	3
4.7	3	2	3	3	3	3	3	3	3	3	4	5	4	5	6	5	6	8	7	11	10	11	11	14	15	14	5	3	2	2	2	3	3	3	3	3	3
5.7	3	2	3	3	2	2	4	4	2	2	5	4	4	4	5	7	8	10	6	6	5	4	5	10	11	8	8	3	-	2	-	3	2	2	2	2	3
6.9a	3	3	2	3	3	2	2	-	-	-	2	2	2	-	2	3	3	4	3	4	4	3	2	5	5	4	5	2	-	-	2	3	3	3	2	2	-
7.7	2	3	2	3	2	2	2	2	3	3	3	3	2	2	5	6	7	6	5	4	4	3	4	5	5	5	4	3	4	2	3	2	2	2	2	3	3
8.7	4	4	4	2	2	3	2	2	3	4	4	3	4	5	5	8	8	7	8	8	6	6	6	6	5	7	8	8	4	3	2	2	3	3	3	4	5
9.9a	3	2	4	2	2	3	2	2	2	3	3	2	2	3	11	11	10	9	8	7	7	7	7	6	5	6	5	5	3	2	3	3	3	2	3	4	3
10.8a	-	-	-	-	-	-	-	2	2	3	2	2	-	-	3	4	3	4	4	5	4	4	3	4	3	2	3	2	2	3	-	-	-	-	2	2	3
11.7	3	2	-	-	2	3	2	3	2	3	4	5	4	5	8	7	9	10	8	8	7	5	6	6	5	5	6	5	2	3	3	2	3	3	4	5	4
13.7	3	4	3	2	2	2	2	2	-	2	3	3	3	4	5	3	4	6	5	6	8	7	8	8	7	4	5	4	2	-	-	-	2	-	2	2	2
14.7	3	4	3	3	2	-	-	2	2	2	3	4	5	5	7	8	9	11	12	13	12	11	14	10	6	4	4	4	3	2	2	2	-	2	3	4	3
16.7a	2	2	2	2	2	-	-	-	2	-	-	2	3	4	5	5	4	5	3	4	5	3	5	2	4	2	2	3	-	2	-	-	-	-	-	2	3
17.8a	-	-	-	-	-	-	-	-	-	2	-	2	-	4	7	8	7	6	5	3	3	2	3	5	4	5	4	-	-	-	-	-	-	-	2	2	3
18.7	-	3	2	3	2	3	2	-	2	-	2	3	5	4	4	8	9	7	5	3	4	2	4	3	3	2	-	2	2	-	2	-	2	2	2	2	2
19.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	4	4	4	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	2
20.7	3	2	3	3	-	2	2	2	2	2	4	5	4	4	5	7	6	8	7	8	8	6	5	5	5	5	4	3	4	3	2	-	2	3	3	3	2
21.7	3	3	4	4	3	3	3	3	2	2	3	4	5	7	8	9	10	10	11	11	10	8	5	6	5	6	4	3	2	3	-	-	2	3	4	3	3
22.8	2	-	3	3	2	3	3	2	3	2	-	4	5	7	6	8	8	9	9	10	12	9	7	5	9	8	6	2	2	2	2	-	2	3	3	3	2
24.7	2	2	2	-	-	2	2	2	2	2	-	3	3	4	3	4	7	6	7	8	5	3	3	2	4	4	-	-	-	2	-	2	2	-	-	-	2
25.7	3	4	2	2	-	3	3	-	2	-	3	4	3	4	4	5	8	7	8	7	4	5	3	4	6	4	3	2	2	-	2	-	-	2	3	2	3
26.7a	3	2	2	2	2	2	3	2	2	2	2	3	3	4	3	5	8	7	6	5	4	3	4	4	5	3	2	2	2	2	-	-	-	2	2	2	3
28.7	3	3	2	3	3	2	3	3	5	8	10	9	8	7	12	11	8	9	8	7	5	6	6	8	6	5	6	4	3	2	2	5	4	5	4	4	3

Table 69b

Coronal observations at Sacramento Peak, New Mexico (6702A), west limb

The 6702A coronal line was not visible on any of the observation dates in February.

Table 70

Zürich Provisional Relative Sunspot Numbers

February 1954

Date	R_Z *	Date	R_Z *
1	0	16	0
2	0	17	0
3	0	18	0
4	0	19	0
5	0	20	0
6	0	21	0
7	0	22	0
8	0	23	0
9	0	24	0
10	0	25	0
11	0	26	0
12	0	27	0
13	0	28	7
14	0	Mean:	0.2
15	0		

*Dependent on observations at Zürich Observatory and its stations at Locarno and Arosa.

Table 71

American Relative Sunspot Numbers - R_A'

January - February 1954

1954	January	February
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	3
9	0	6
10	0	0
11	*2	0
12	0	0
13	0	0
14	0	0
15	0	0
16	0	0
17	0	0
18	0	0
19	0	0
20	0	0
21	0	0
22	0	0
23	0	0
24	0	0
25	0	0
26	0	0
27	0	0
28	0	0
29	0	
30	0	
31	0	
Mean	0.1	0.3

*One out of 4 observers reporting for this day saw a group with two spots; this observation was confirmed photographically at another observatory.

Table 72

Solar Flares, February 1954

No solar flares were reported for the month of February.

Table 73

Indices of Geomagnetic Activity for January 1954

Preliminary values of international character-figures, C;
Geomagnetic planetary three-hour-range indices, Kp;
Magnetically selected quiet and disturbed days

Gr. Day 1954	C	Values Kp three-hour interval 1 2 3 4	5 6 7 8	Sum	Final Selected Days
1	0.2	2- 2o 2o 1+	1- 0o 1+ 1+	10+	Five
2	1.3	3+ 3- 4- 3+	5o 5- 2+ 2+	27+	Quiet
3	0.1	2+ 2o 2+ 3-	2- 1o 0+ 1o	13+	
4	0.0	0o 0+ 1- 0+	0o 0+ 0+ 0+	2+	4
5	0.8	1+ 0+ 0+ 1-	1o 1+ 3o 4+	12+	10
					26
6	0.4	2o 3+ 2+ 1+	2+ 2+ 1+ 1o	16o	28
7	0.4	1- 2o 1+ 1o	1+ 2+ 2+ 1o	12o	29
8	0.6	3+ 2+ 3o 3-	1o 2- 2- 3-	18+	
9	0.2	3- 2- 1+ 2-	2o 1+ 1o 2o	14-	
10	0.1	1- 1+ 1o 1o	1+ 1+ 2- 2-	10o	
11	0.5	0+ 3- 3- 2+	1- 2o 1o 2+	14o	Five
12	0.7	2- 2- 1o 3-	2- 4- 2+ 2o	17-	Disturbed
13	0.6	3+ 3o 3+ 2+	1+ 1- 1o 3-	18-	
14	0.4	1- 1- 1o 1-	1- 1+ 2+ 3-	10o	2
15	0.7	3- 1+ 4- 2o	2o 2- 2o 3+	19-	19
					20
16	0.4	3- 2- 1o 1+	2- 1o 3o 1o	13+	21
17	0.3	0+ 1+ 1- 1o	1+ 2+ 3- 2-	11+	23
18	1.1	2o 2+ 2o 1+	3- 2o 3- 5o	20o	
19	1.3	4o 2+ 4- 4-	2+ 4- 5- 5-	29o	
20	1.0	4o 2+ 4- 3-	3- 3o 4- 2-	24-	
21	0.9	4o 4- 3o 2o	3- 2+ 3- 3+	24-	Ten
22	0.8	3o 4- 4- 3o	3- 2+ 3- 1+	22+	Quiet
23	0.7	3+ 4+ 4- 3o	2o 2+ 2o 2-	22+	
24	0.1	2+ 1+ 2- 1+	1- 1o 1o 1-	10o	1
25	0.3	1o 1+ 1o 1-	1o 3- 2+ 1-	11-	4
					10
26	0.1	2o 2- 1- 0+	0+ 1o 1+ 1o	8+	14
27	0.2	2o 1- 1- 1-	2- 2- 2o 1-	10o	24
28	0.1	1+ 1- 2o 2-	1- 0+ 0+ 0+	7+	26
29	0.0	1o 1o 1- 0+	0+ 2- 1o 0+	6+	27
30	0.3	1o 1- 1o 1+	1- 2- 1+ 3-	10+	28
31	0.6	2- 3- 1o 2o	1+ 3o 2- 3-	16o	29
					30
Mean:	0.62				

Table 74

Sudden Ionosphere Disturbances Observed at Washington, D. C.

February 1954

No sudden ionosphere disturbances were observed during the month of February.

Table 75

Sudden Ionosphere Disturbances Reported by RCA Communications, Inc. as Observed at Point Reyes, California

1953 Day	GCT Beginning	GCT End	Location of transmitters	Other phenomena
December 22	0155	0235	Australia, China, Guam, Hawaii, Japan, Okinawa, Philippine Is.	

Note: Observers are invited to send to the CRPL information on times of beginning and end of sudden ionosphere disturbances for publication as above. Address letters to the Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

GRAPHS OF IONOSPHERIC DATA

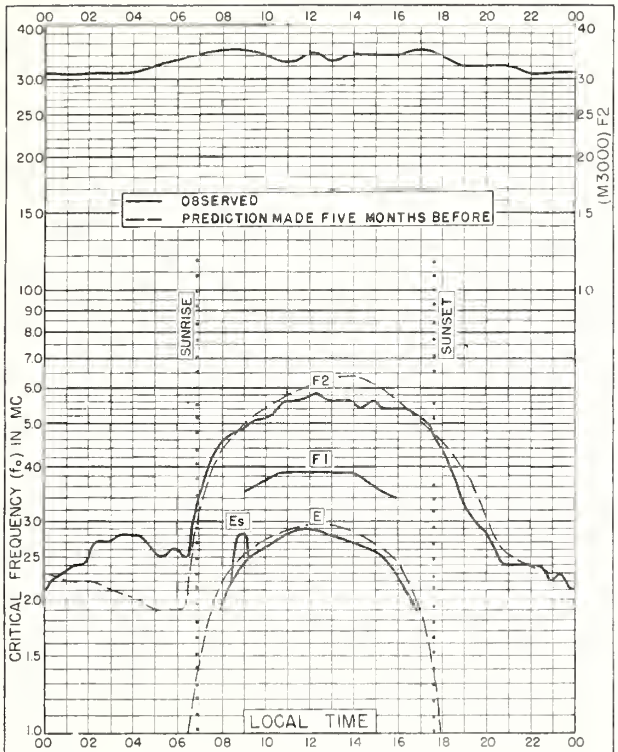


Fig. I. WASHINGTON, D. C.
38.7°N, 77.1°W FEBRUARY 1954

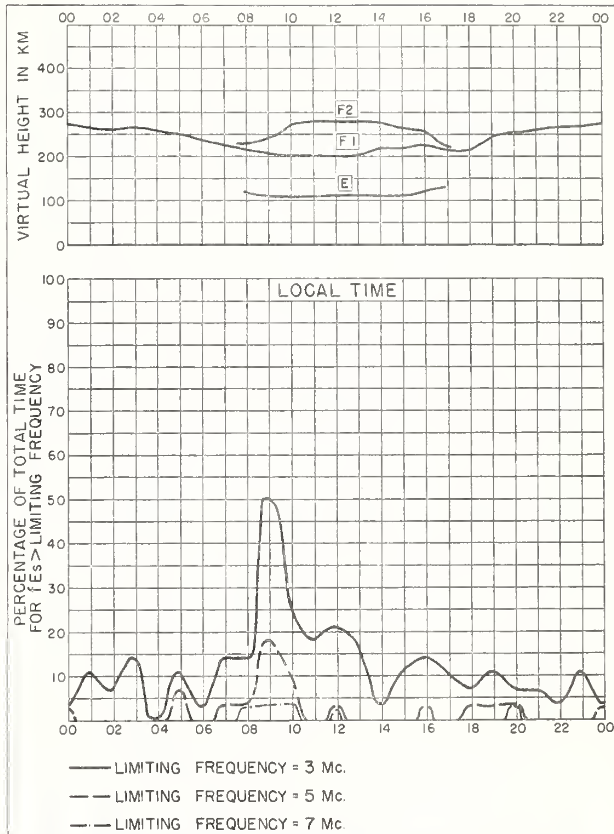


Fig. 2. WASHINGTON, D.C. FEBRUARY 1954

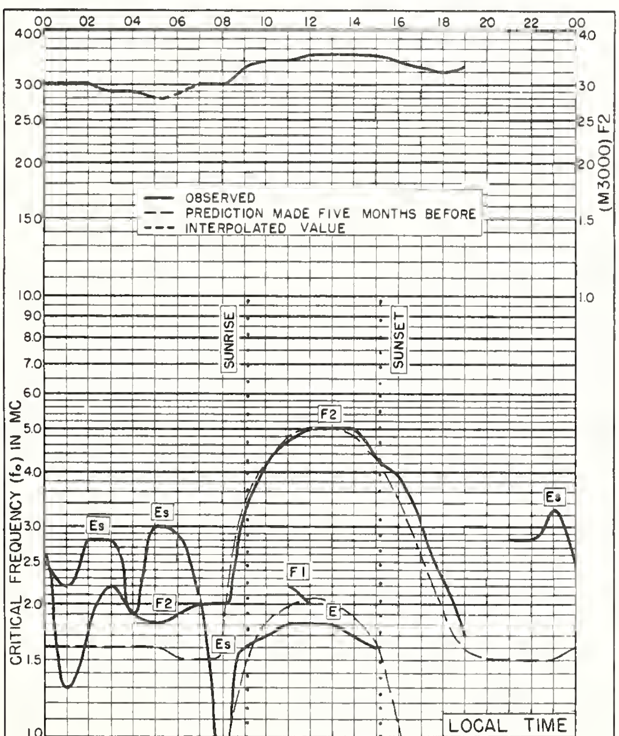


Fig. 3. ANCHORAGE, ALASKA
61.2° N, 149.9° W JANUARY 1954

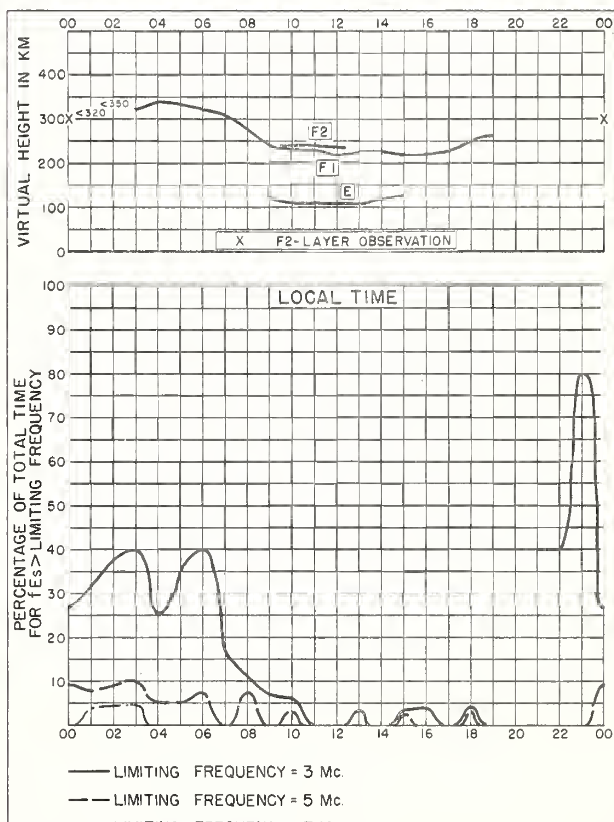


Fig 4. ANCHORAGE, ALASKA JANUARY 1954

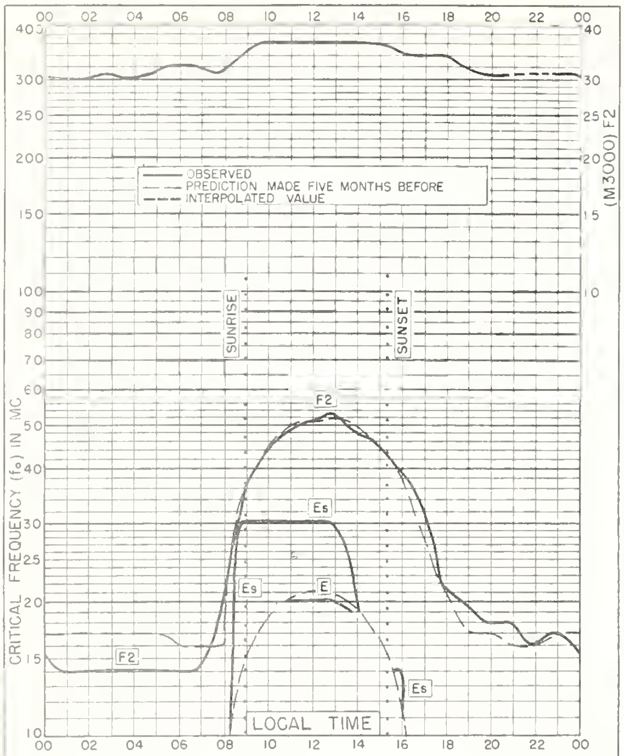


Fig. 5. OSLO, NORWAY
60.0° N, 11.1° E JANUARY 1954

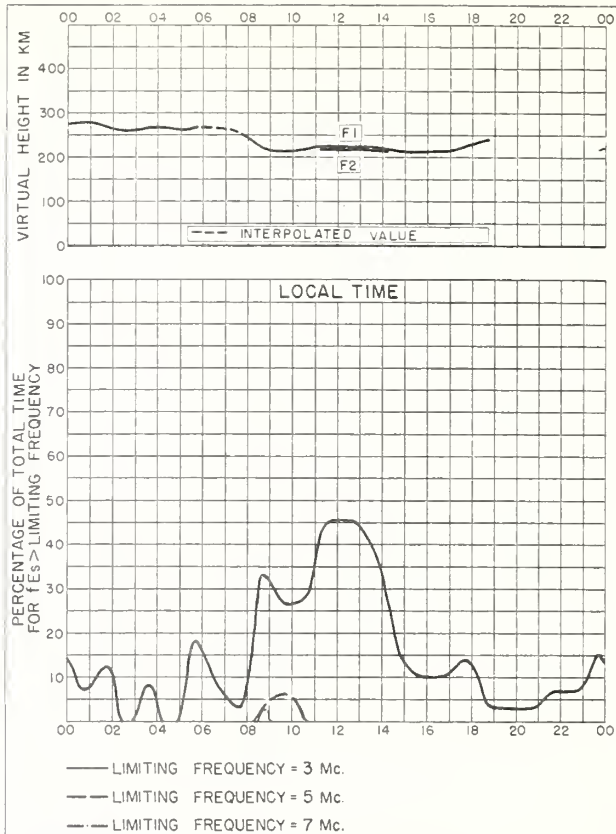


Fig. 6. OSLO, NORWAY JANUARY 1954

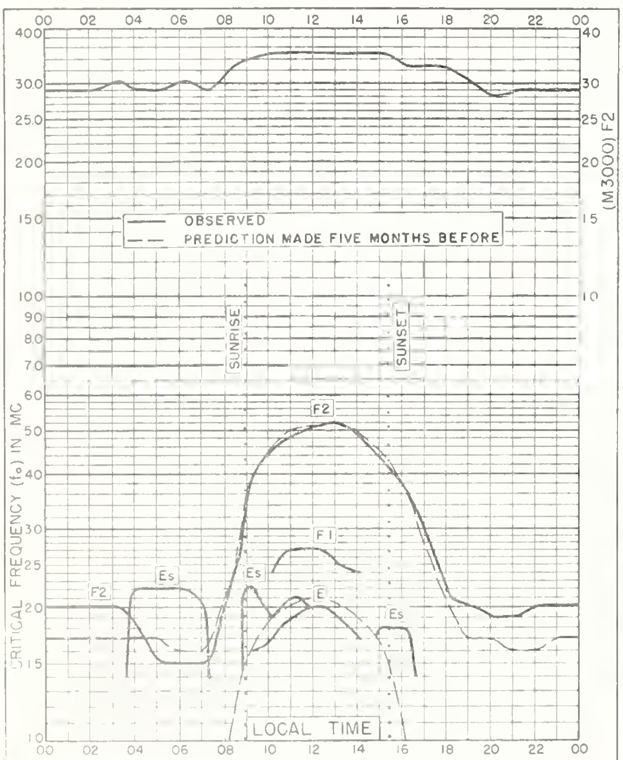


Fig 7 UPSALA, SWEDEN
59.8° N, 17.6° E JANUARY 1954

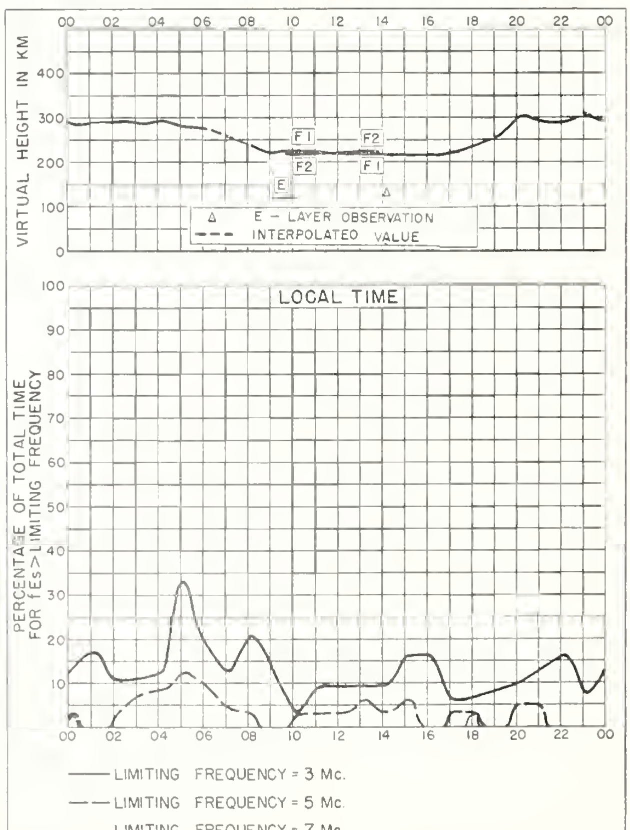


Fig 8. UPSALA, SWEDEN JANUARY 1954

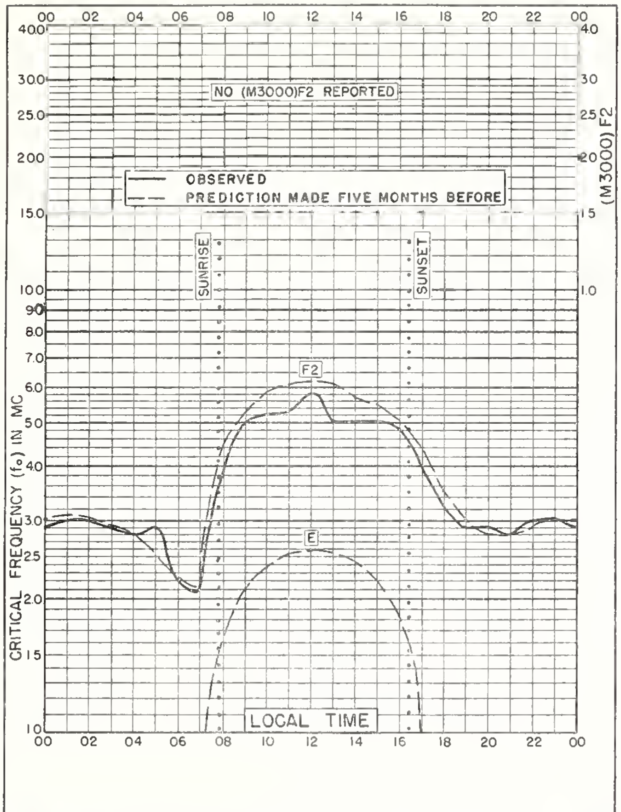


Fig. 9. GRAZ, AUSTRIA
47.1° N, 15.5° E JANUARY 1954

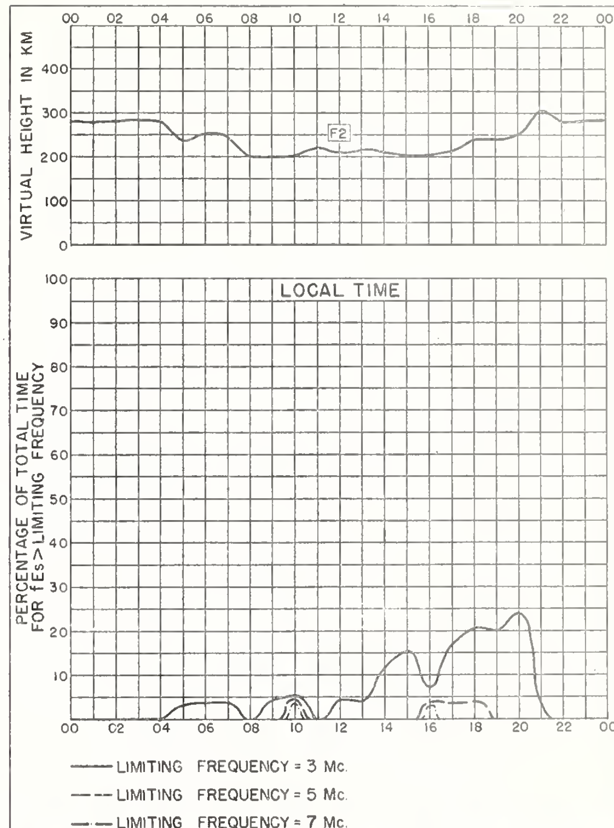


Fig. 10. GRAZ, AUSTRIA JANUARY 1954

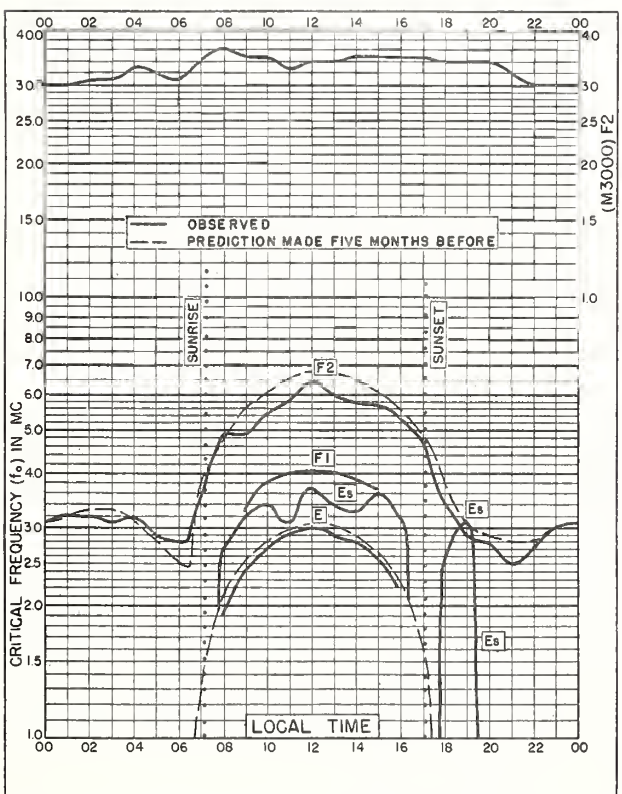


Fig. 11. WHITE SANDS, NEW MEXICO
32.3° N, 106.5° W JANUARY 1954

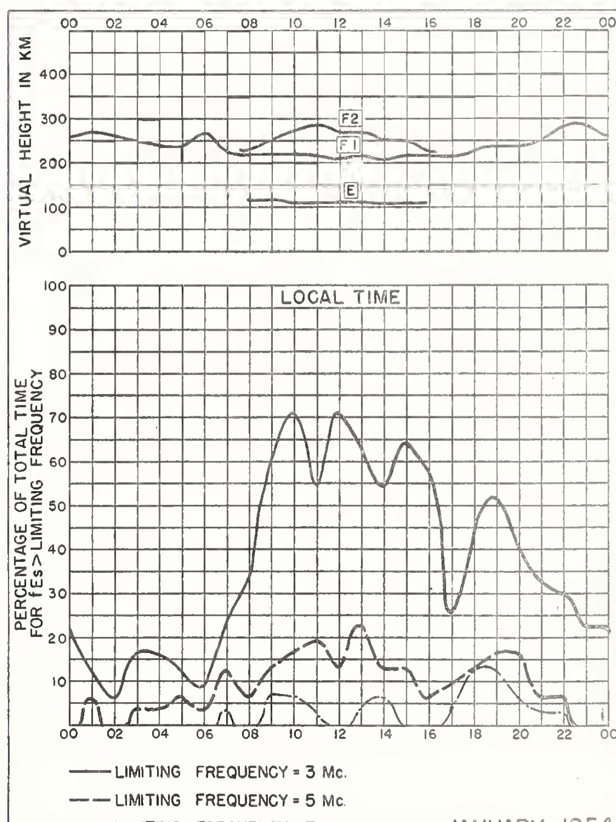


Fig. 12. WHITE SANDS, NEW MEXICO JANUARY 1954

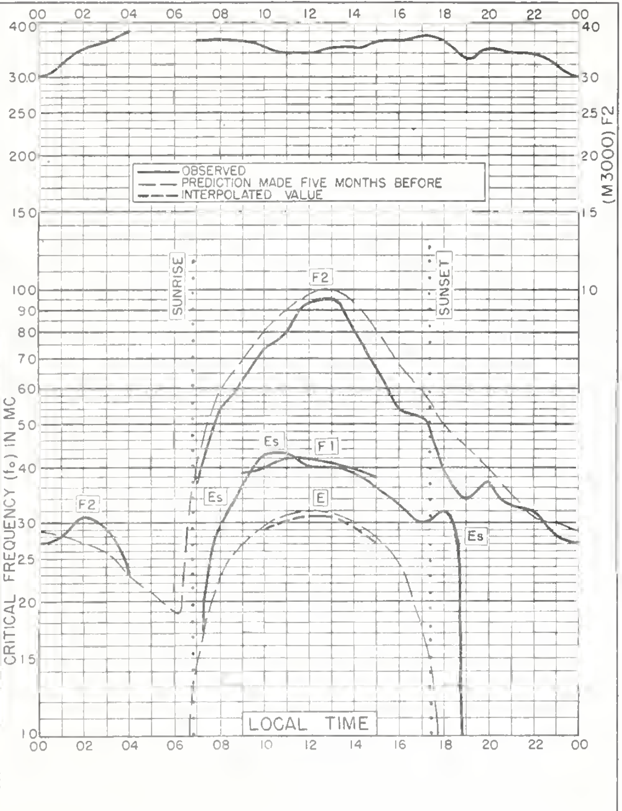


Fig. 13. OKINAWA I.
26.3° N, 127.8° E JANUARY 1954

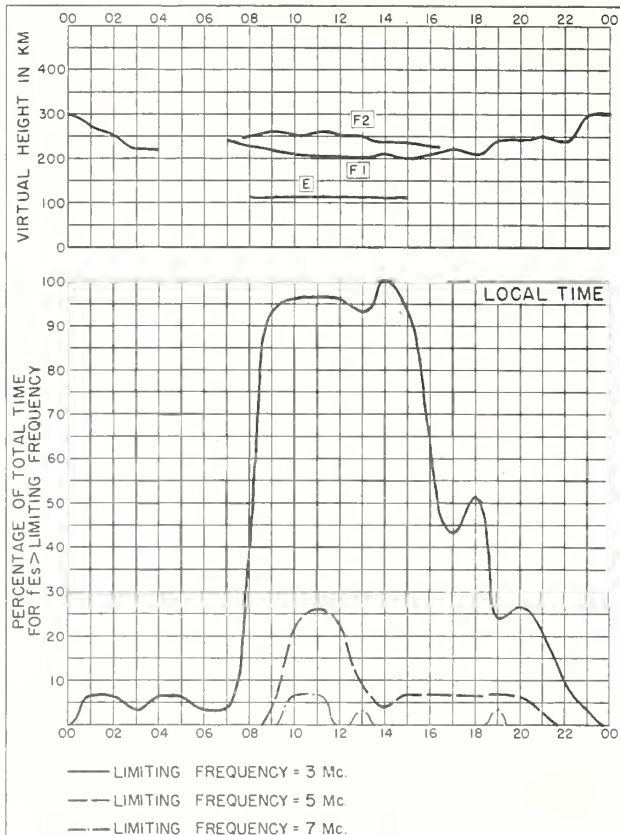


Fig. 14. OKINAWA I. JANUARY 1954

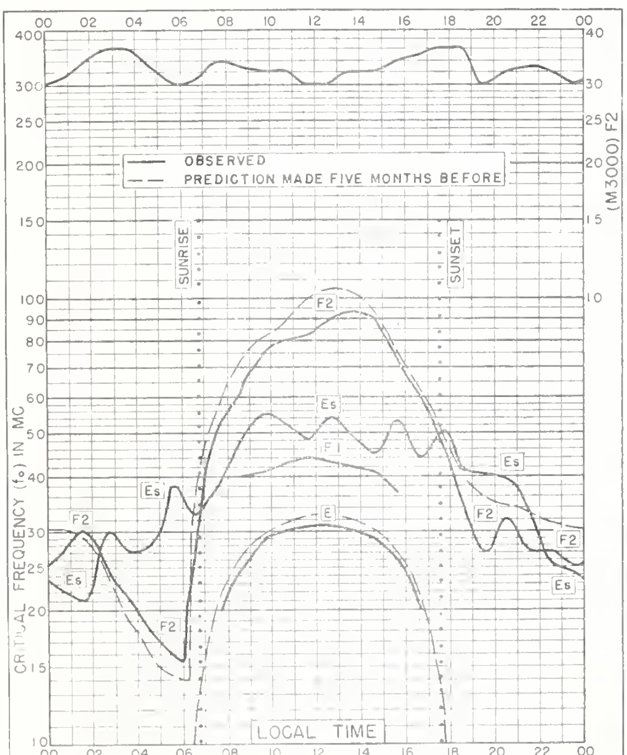


Fig. 15. MAUI, HAWAII
20.8° N, 156.5° W JANUARY 1954

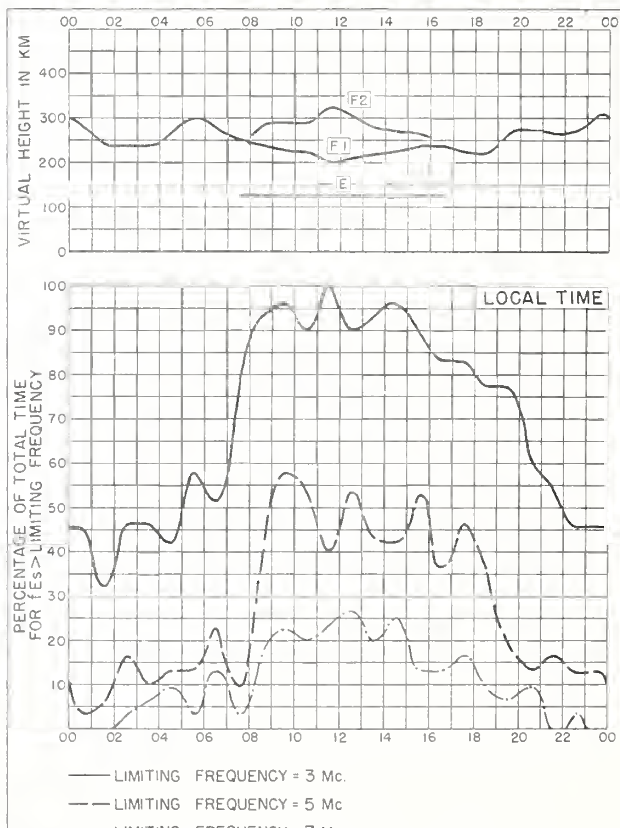


Fig. 16. MAUI, HAWAII JANUARY 1954

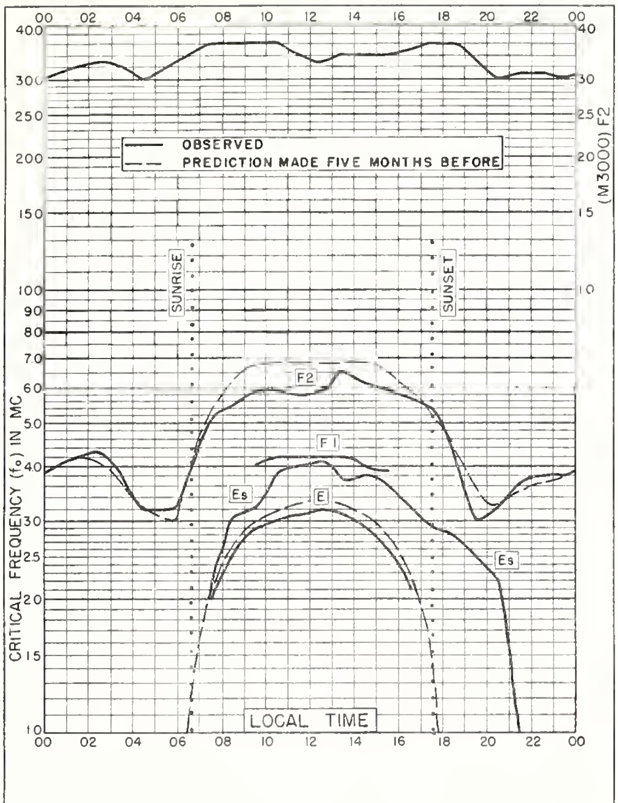


Fig. 17. PUERTO RICO, W.I.
18.5° N, 67.2° W JANUARY 1954

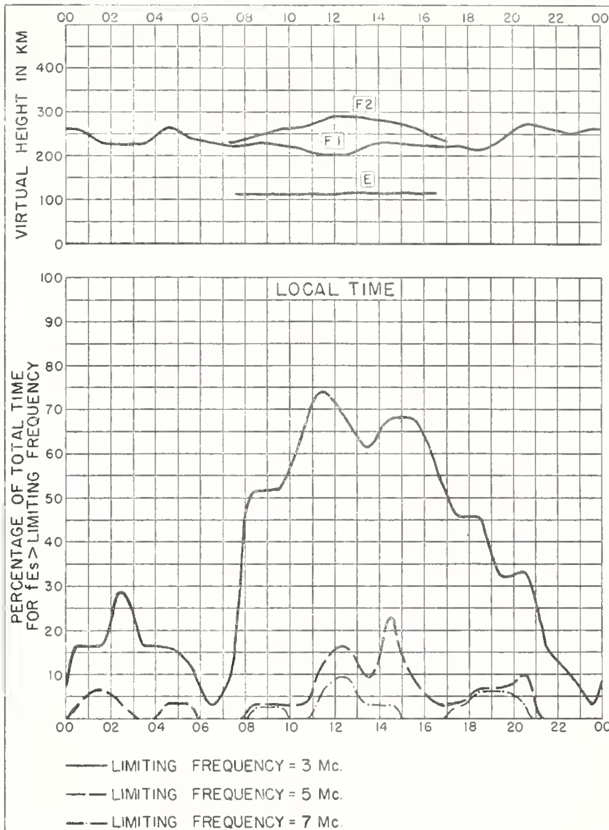


Fig. 18. PUERTO RICO, W.I. JANUARY 1954

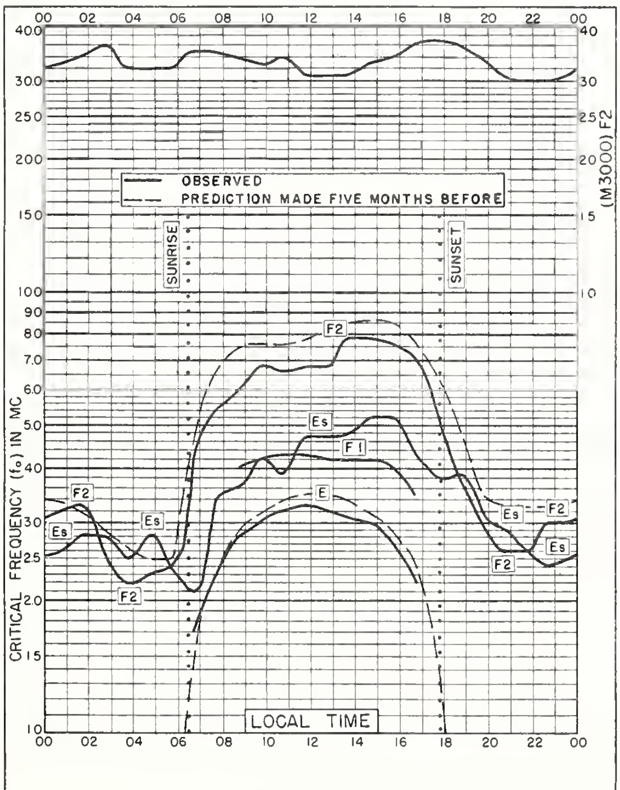


Fig. 19. PANAMA CANAL ZONE
9.4° N, 79.9° W JANUARY 1954

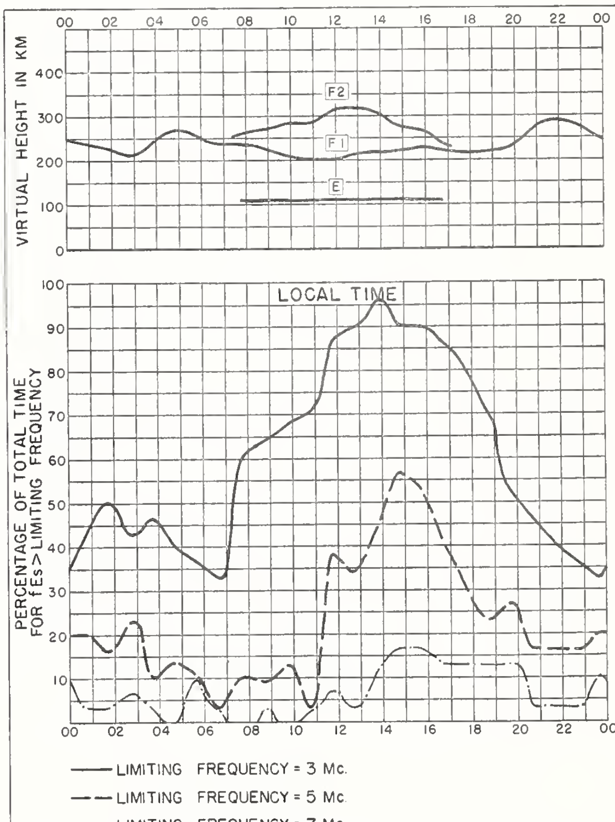


Fig. 20. PANAMA CANAL ZONE JANUARY 1954

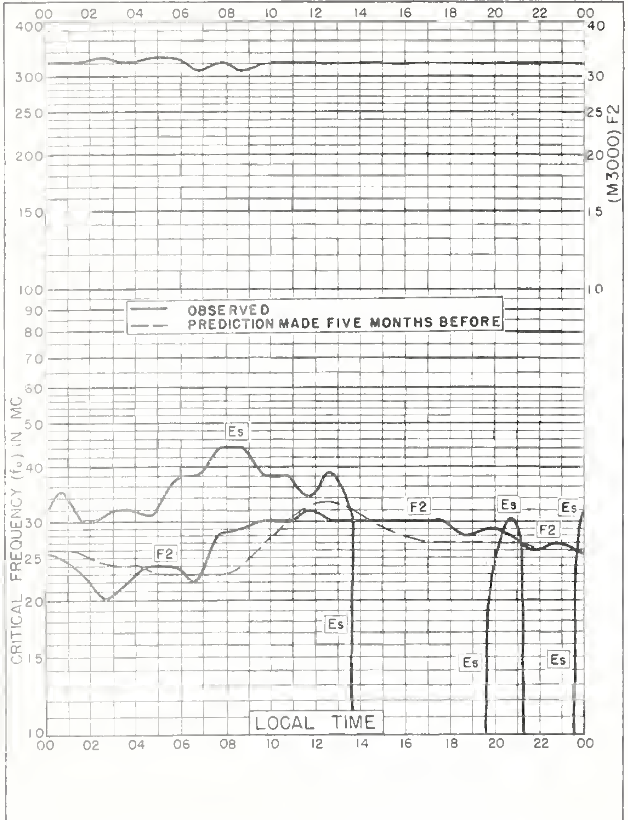


Fig. 21. RESOLUTE BAY, CANADA
74.7° N, 94.9° W DECEMBER 1953

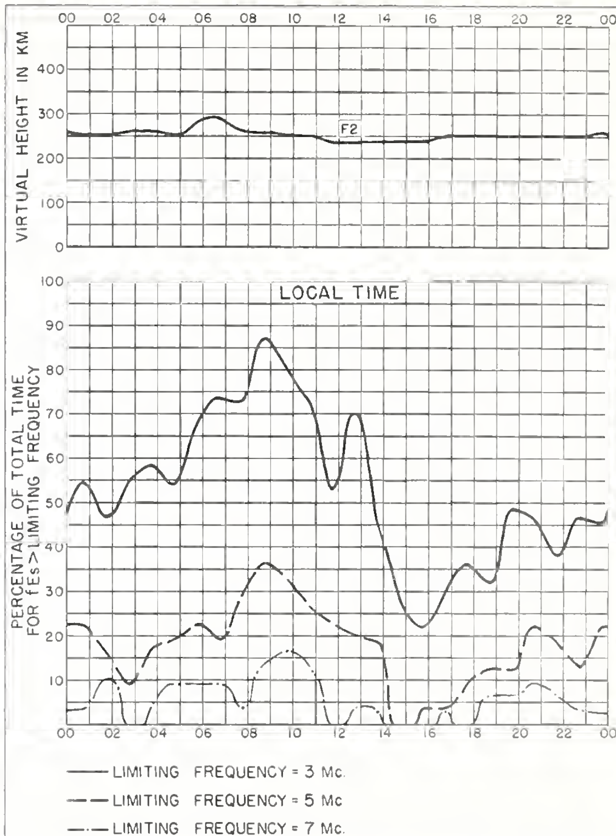


Fig. 22. RESOLUTE BAY, CANADA DECEMBER 1953

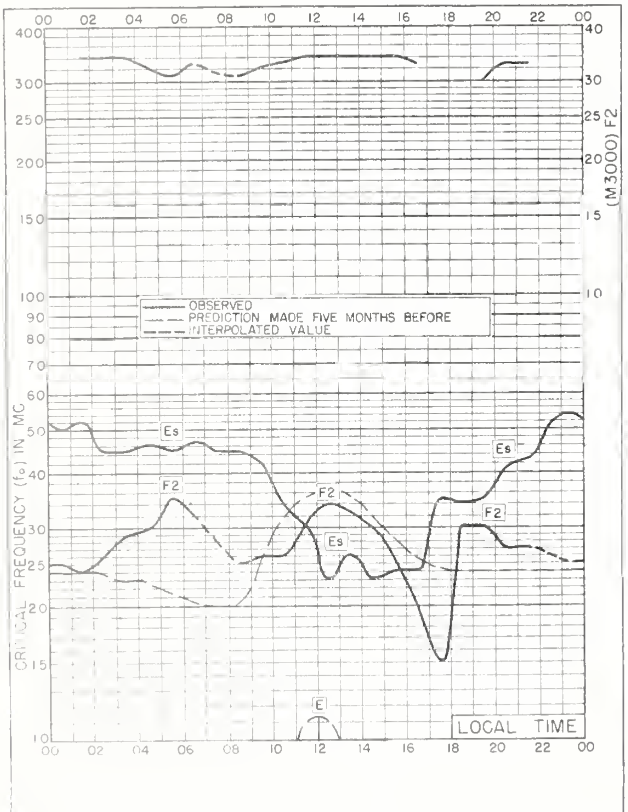
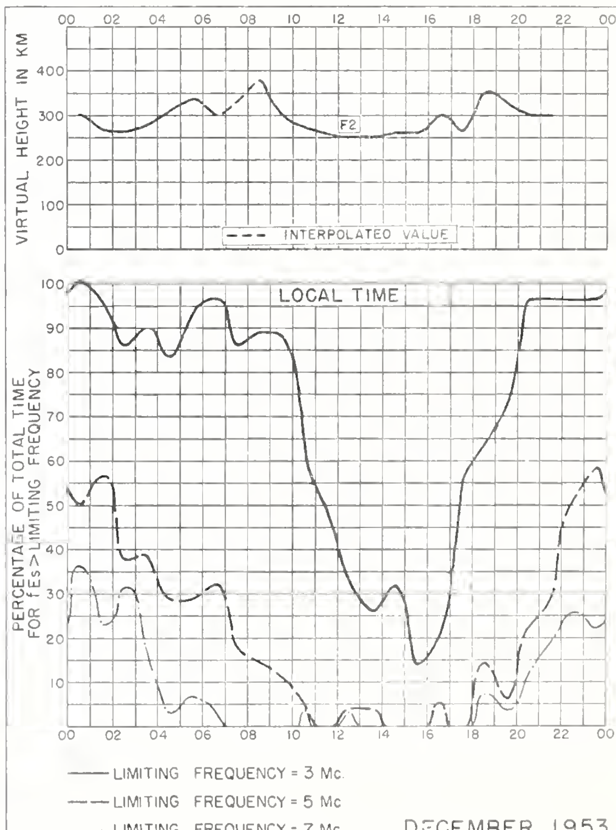


Fig. 23. POINT BARROW, ALASKA
71.3° N, 156.8° W DECEMBER 1953



DECEMBER 1953
Fig. 24. POINT BARROW, ALASKA

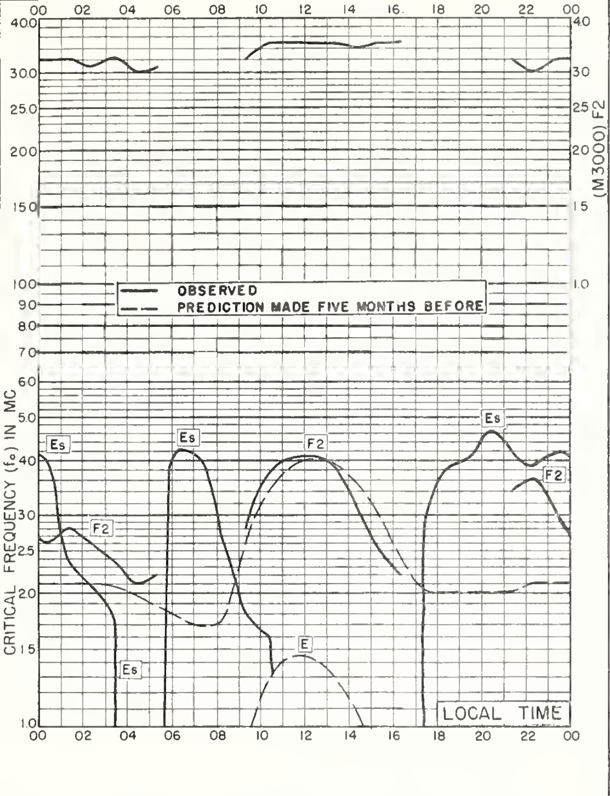


Fig. 25. KIRUNA, SWEDEN
67.8°N, 20.3°E DECEMBER 1953

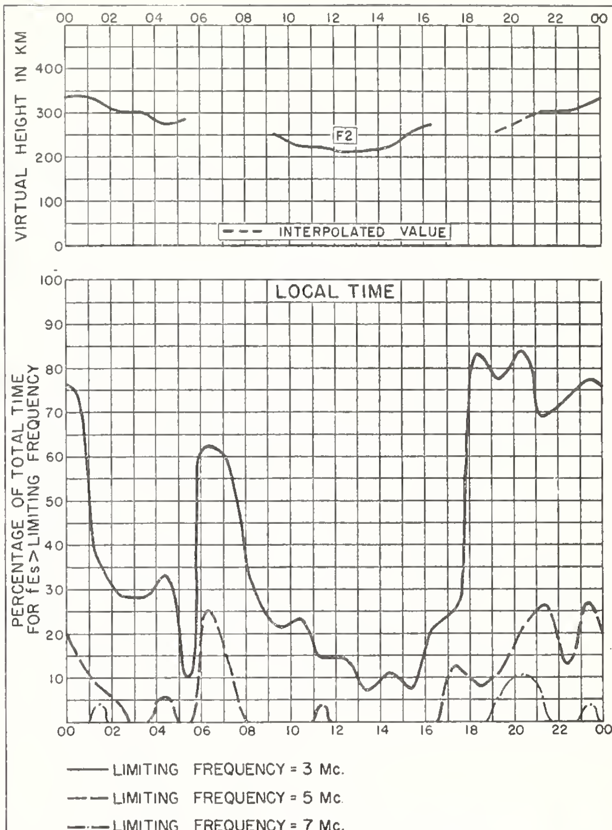


Fig. 26. KIRUNA, SWEDEN DECEMBER 1953

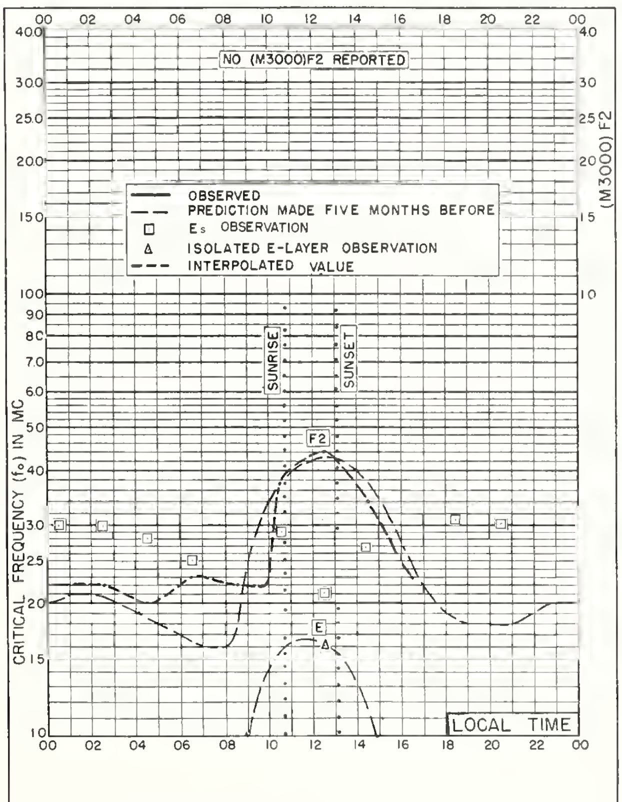


Fig. 27. LULEA, SWEDEN
65.6°N, 22.1°E DECEMBER 1953

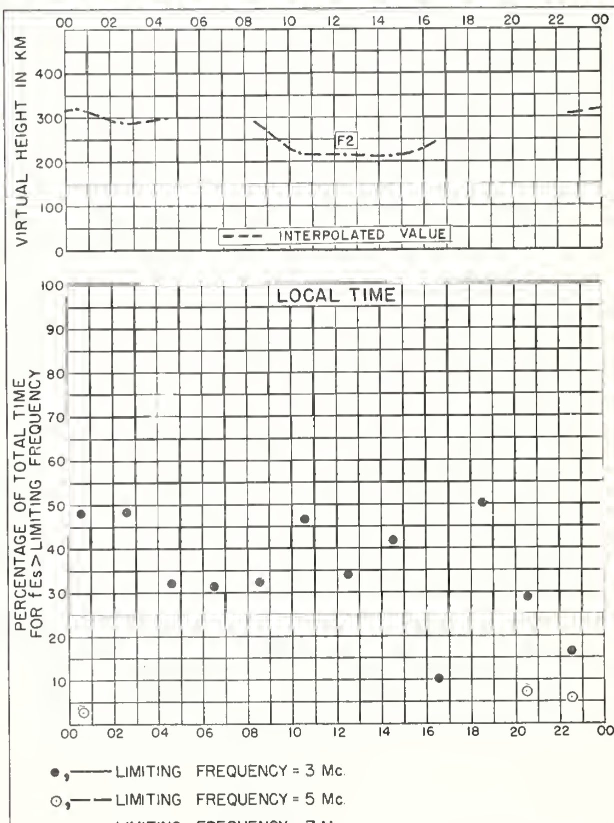


Fig. 28. LULEA, SWEDEN DECEMBER 1953

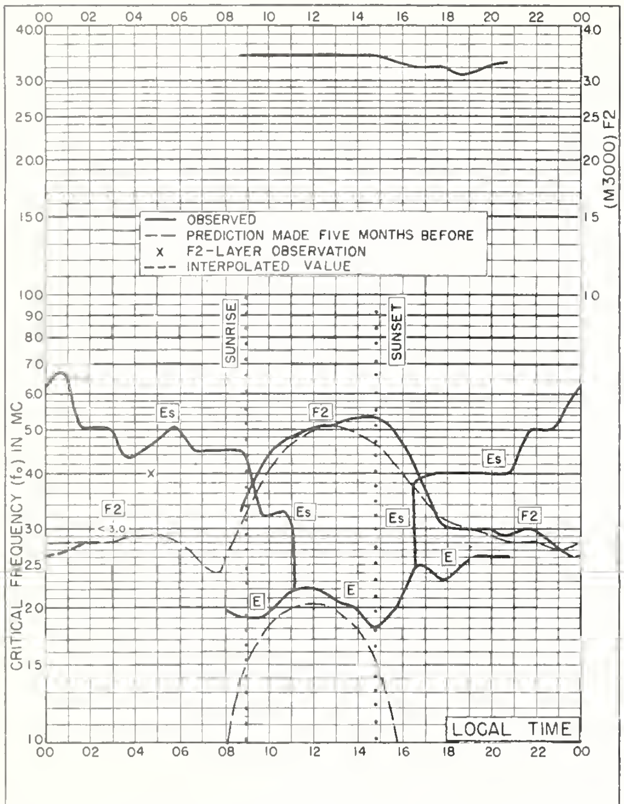


Fig. 29. CHURCHILL, CANADA
58.8° N, 94.2° W DECEMBER 1953

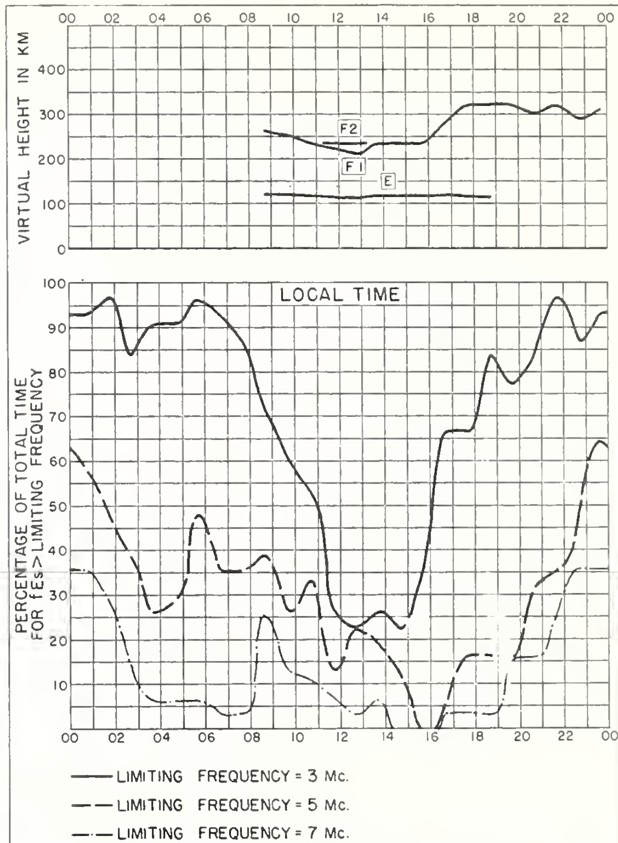


Fig. 30. CHURCHILL, CANADA DECEMBER 1953

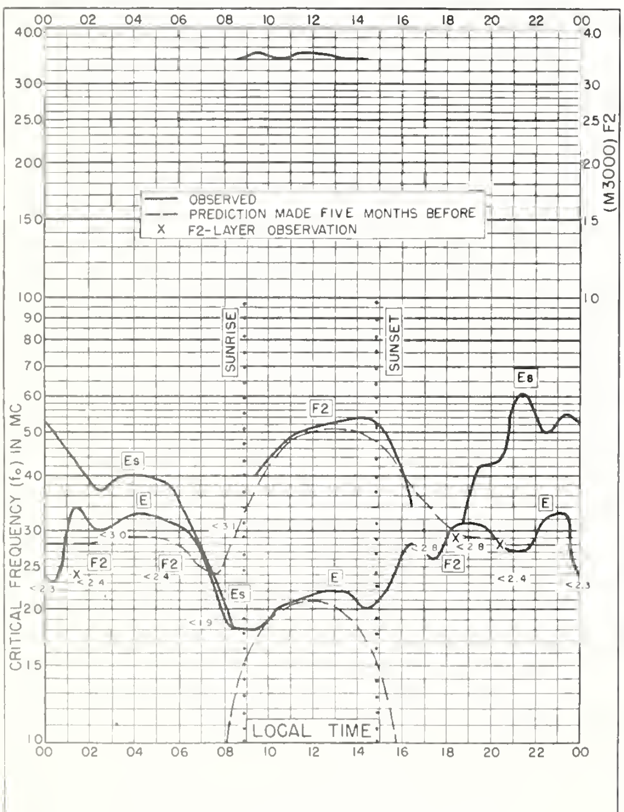


Fig 31. FORT CHIMO, CANADA
58.1° N, 68.3° W DECEMBER 1953

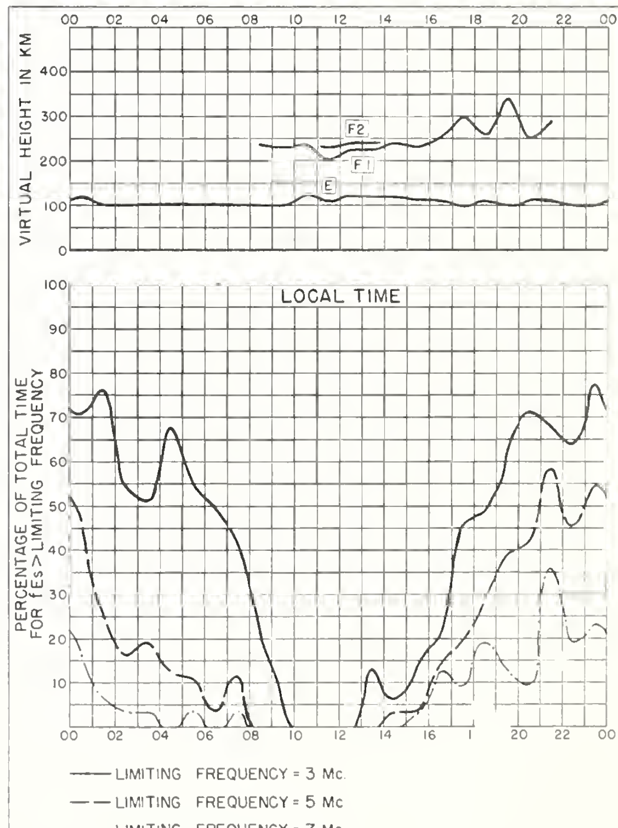


Fig 32. FORT CHIMO, CANADA DECEMBER 1953

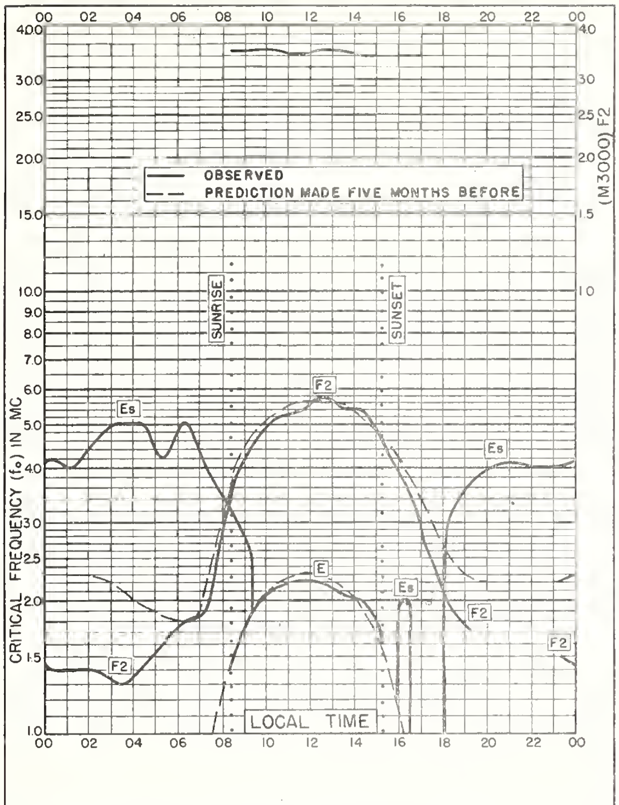


Fig. 33. PRINCE RUPERT, CANADA
54.3° N, 130.3° W DECEMBER 1953

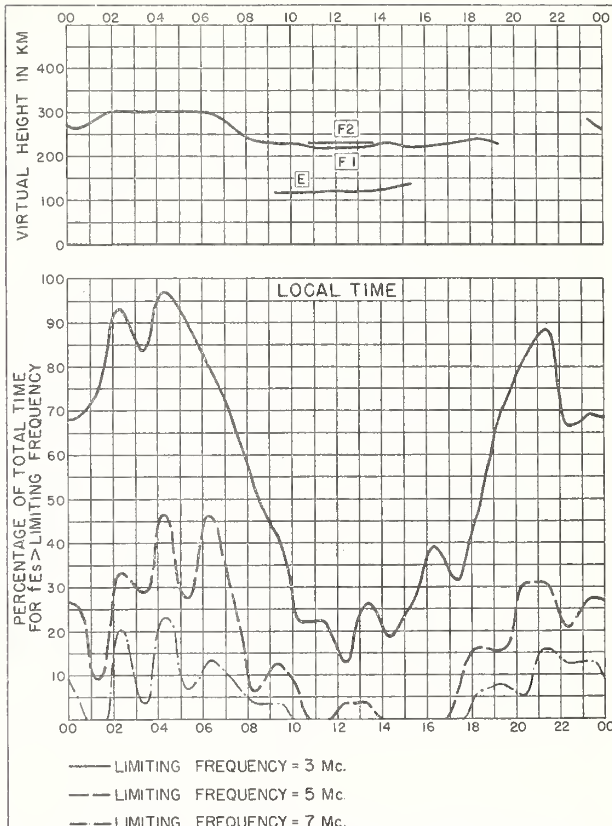


Fig. 34. PRINCE RUPERT, CANADA DECEMBER 1953

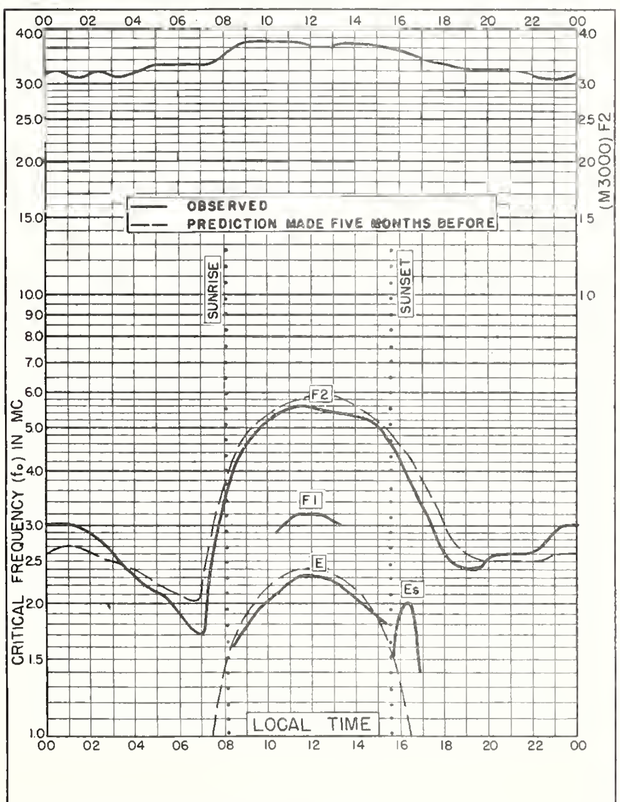


Fig. 35. DE BILT, HOLLAND
52.1° N, 5.2° E DECEMBER 1953

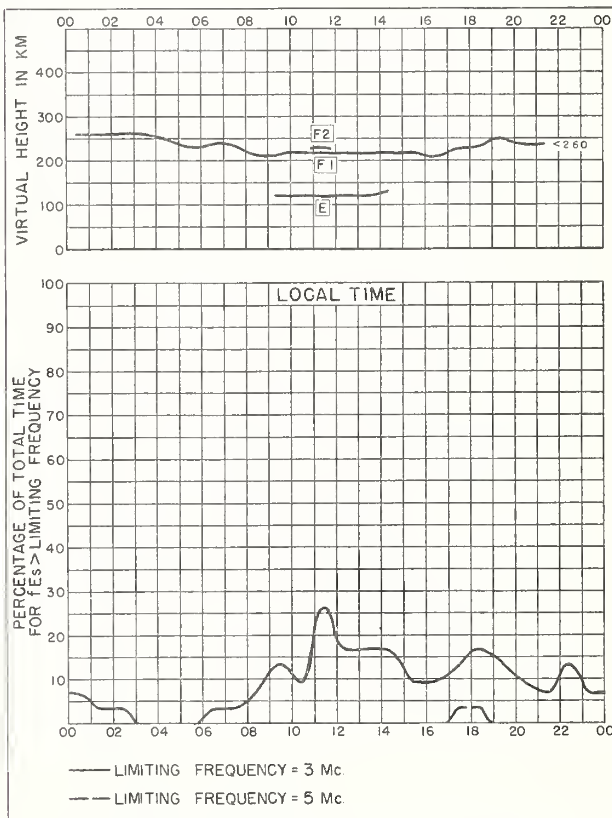


Fig. 36. DE BILT, HOLLAND DECEMBER 1953

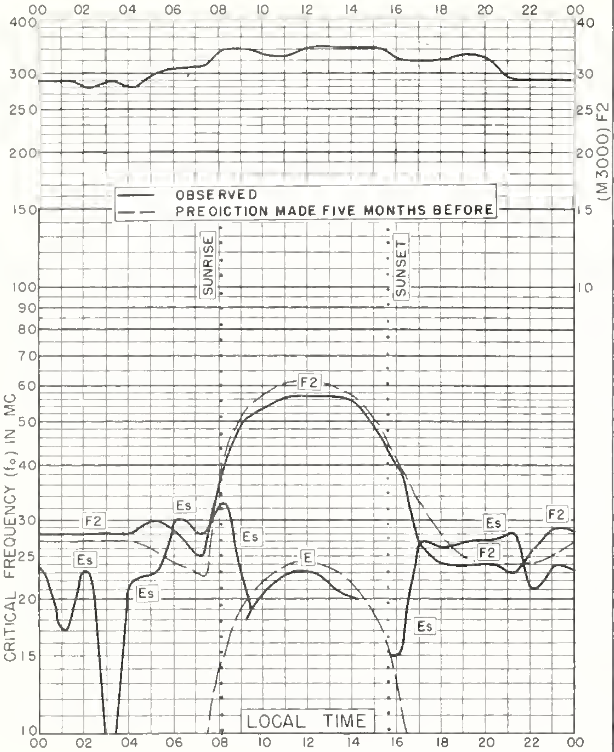


Fig. 37. ADAK, ALASKA
51.9° N, 176.6° W DECEMBER 1953

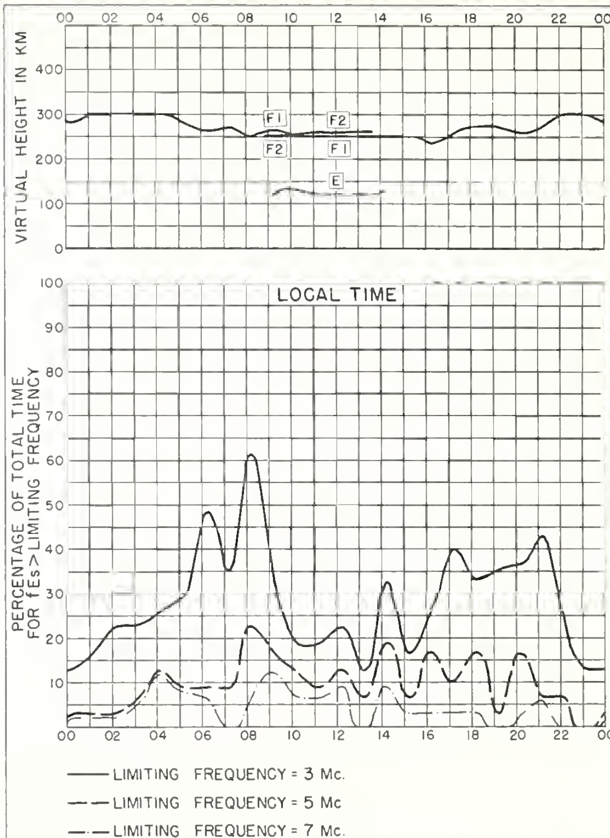


Fig. 38. ADAK, ALASKA DECEMBER 1953

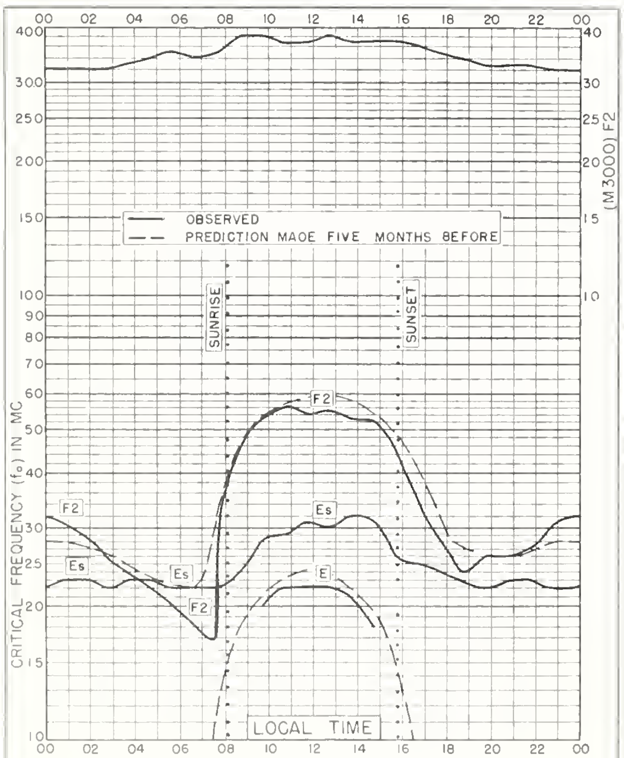
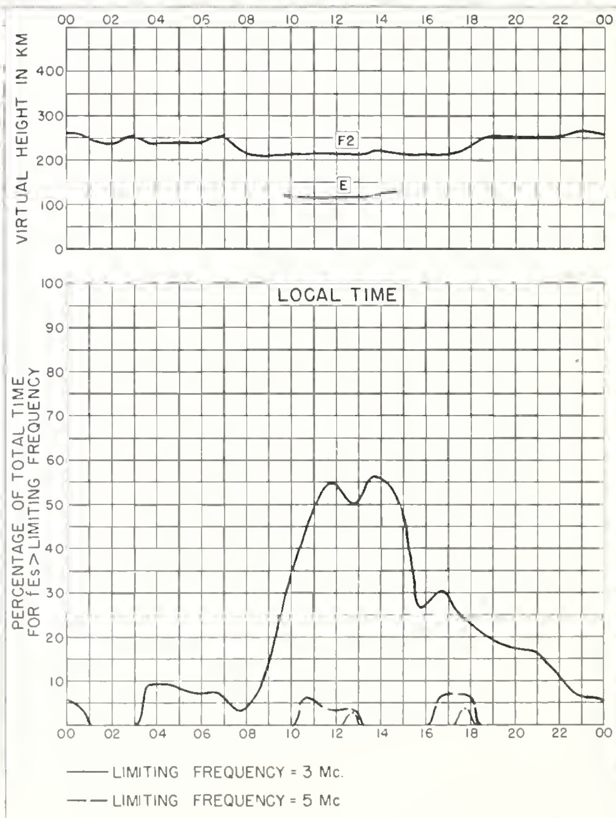


Fig. 39. LINDAU/HARZ, GERMANY
51.6° N, 10.1° E DECEMBER 1953



DECEMBER 1953
Fig. 40. LINDAU/HARZ, GERMANY

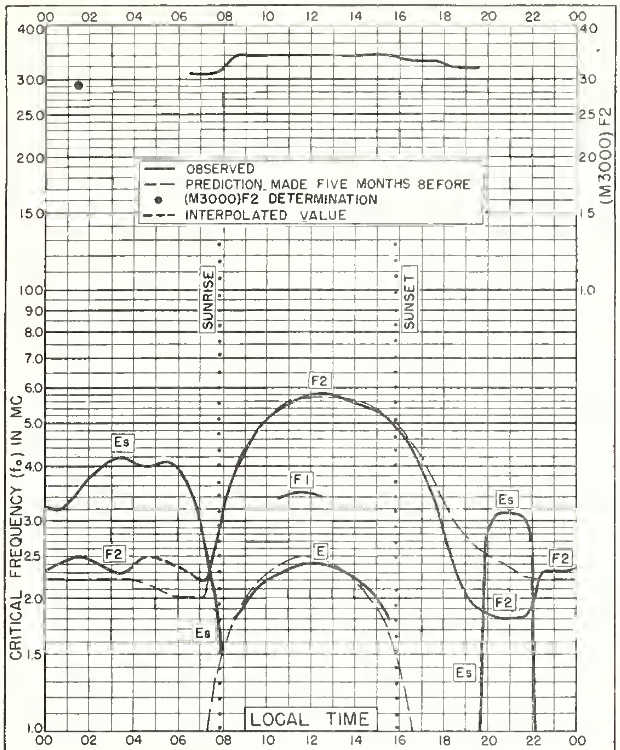


Fig. 41. WINNIPEG, CANADA
49.9° N, 97.4° W DECEMBER 1953

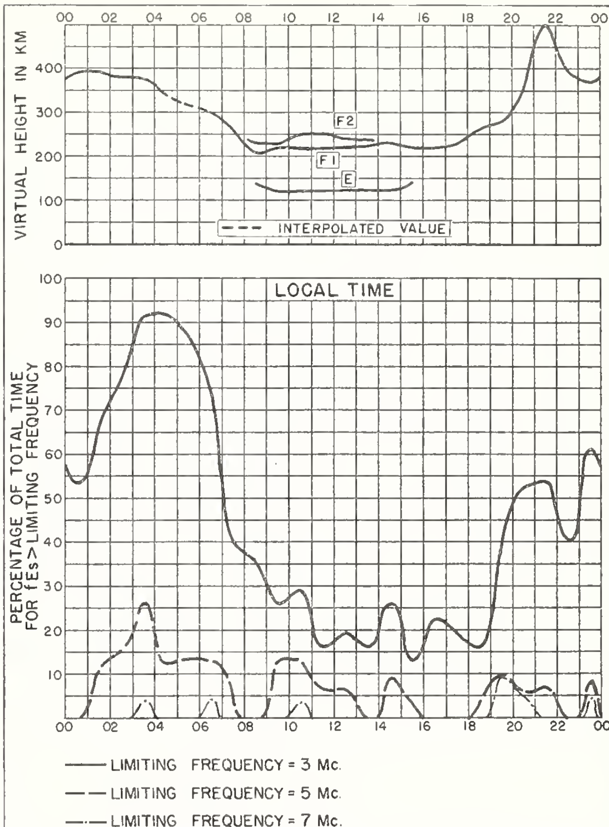


Fig. 42. WINNIPEG, CANADA DECEMBER 1953

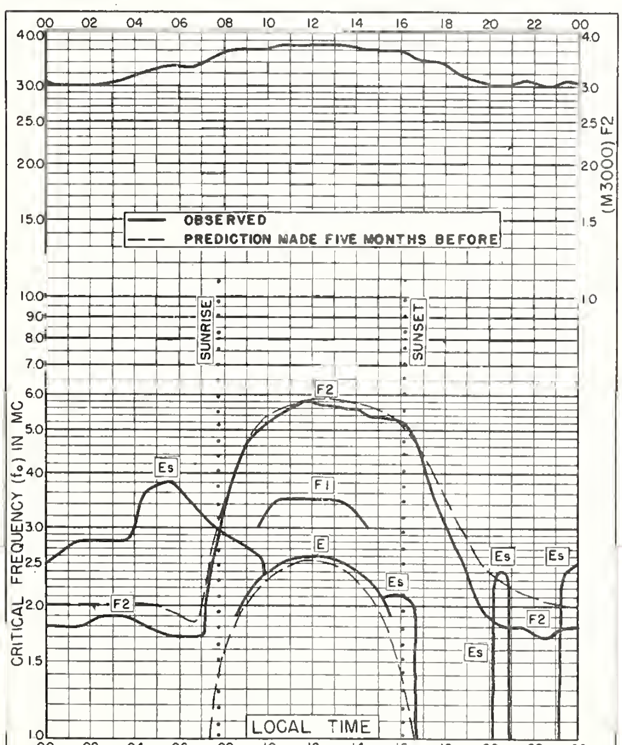
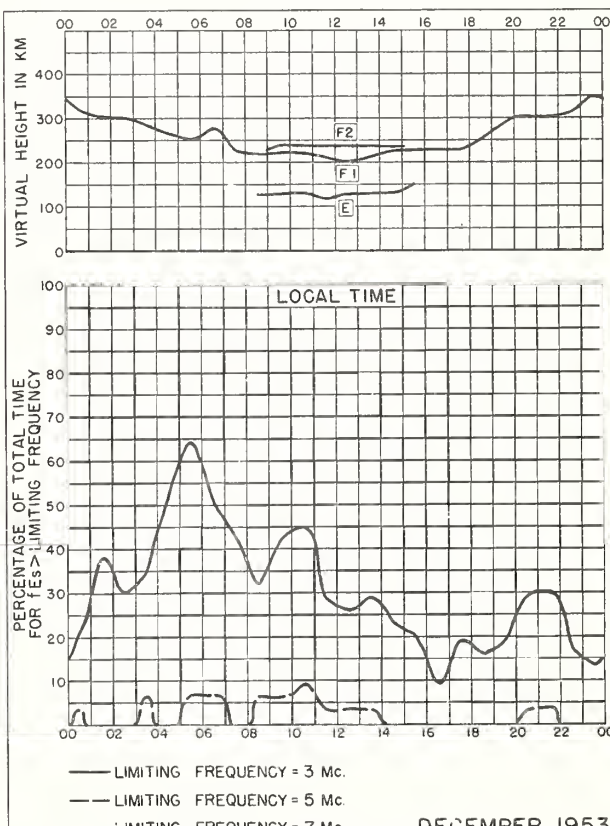


Fig. 43. ST. JOHN'S, NEWFOUNDLAND
47.6° N, 52.7° W DECEMBER 1953



DECEMBER 1953
Fig. 44. ST. JOHN'S, NEWFOUNDLAND

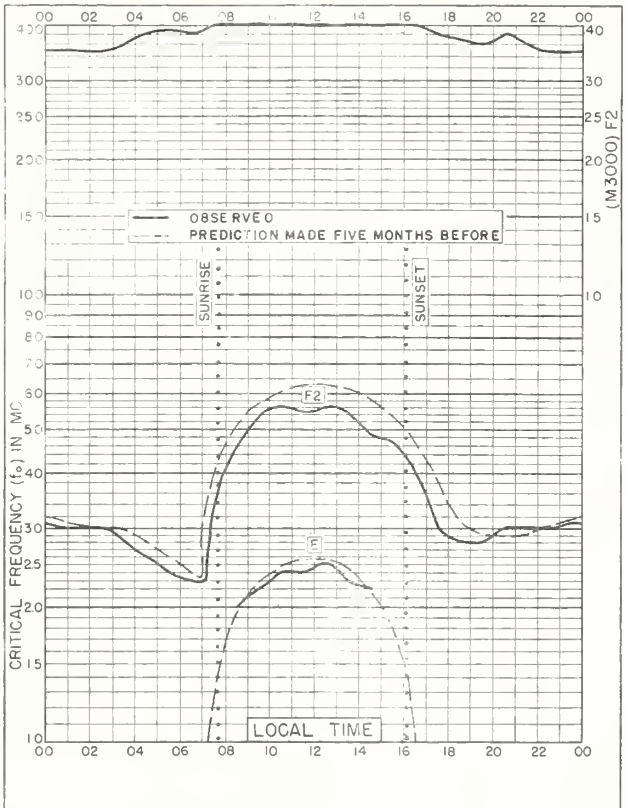
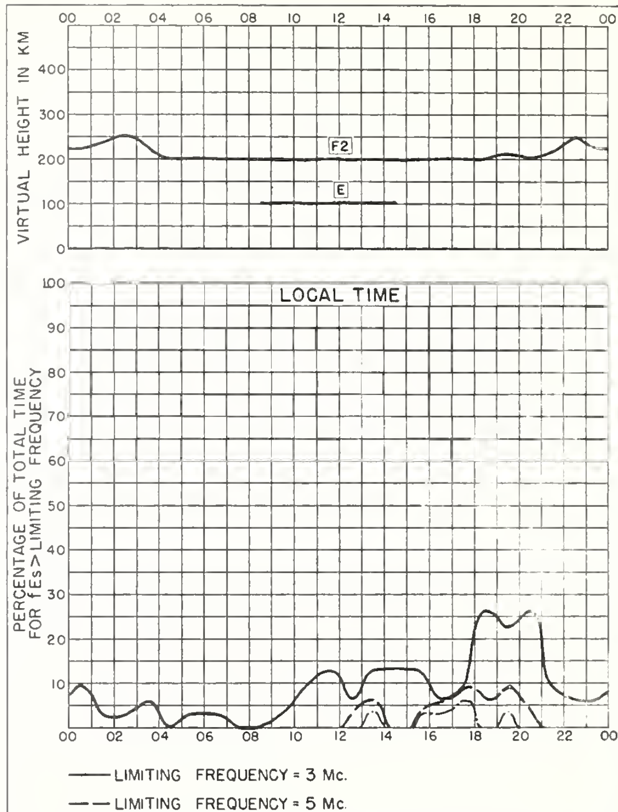


Fig. 45. SCHWARZENBURG, SWITZERLAND
46.8° N, 7.3°E DECEMBER 1953



DECEMBER 1953
Fig. 46. SCHWARZENBURG, SWITZERLAND

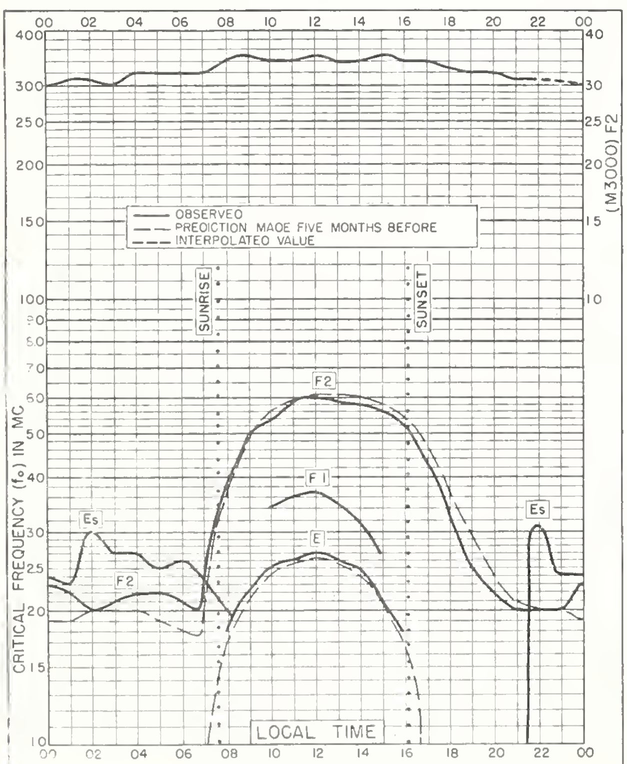


Fig 47. OTTAWA, CANADA
45.4° N, 75.9° W DECEMBER 1953

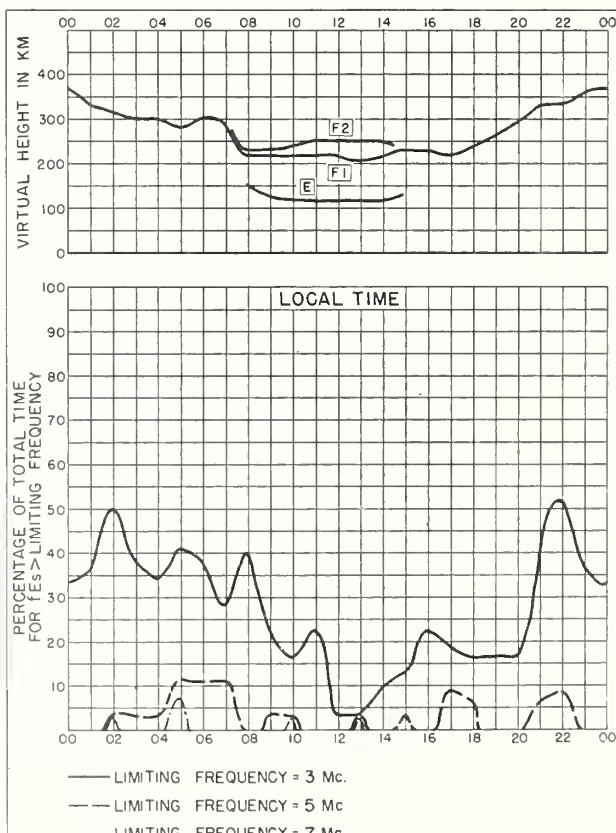


Fig. 48. OTTAWA, CANADA DECEMBER 1953

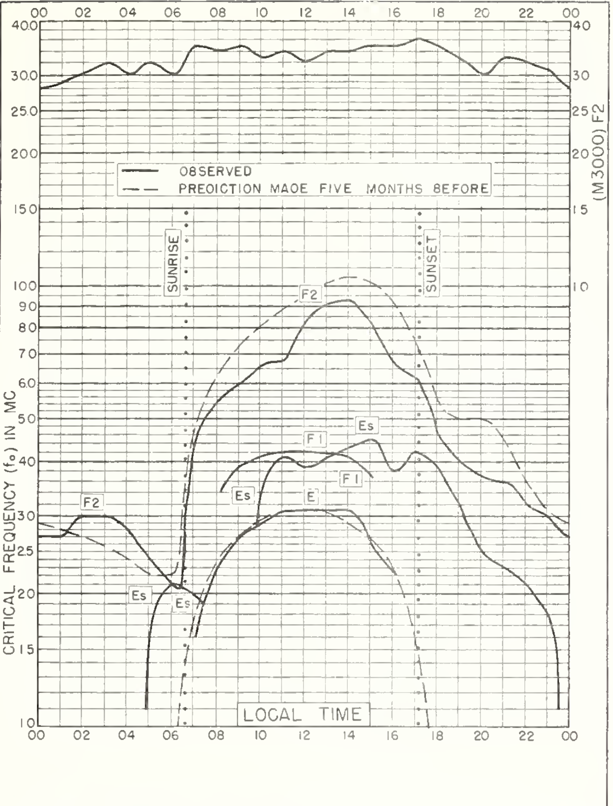


Fig. 49. FORMOSA, CHINA
25.0° N, 121.5° E DECEMBER 1953

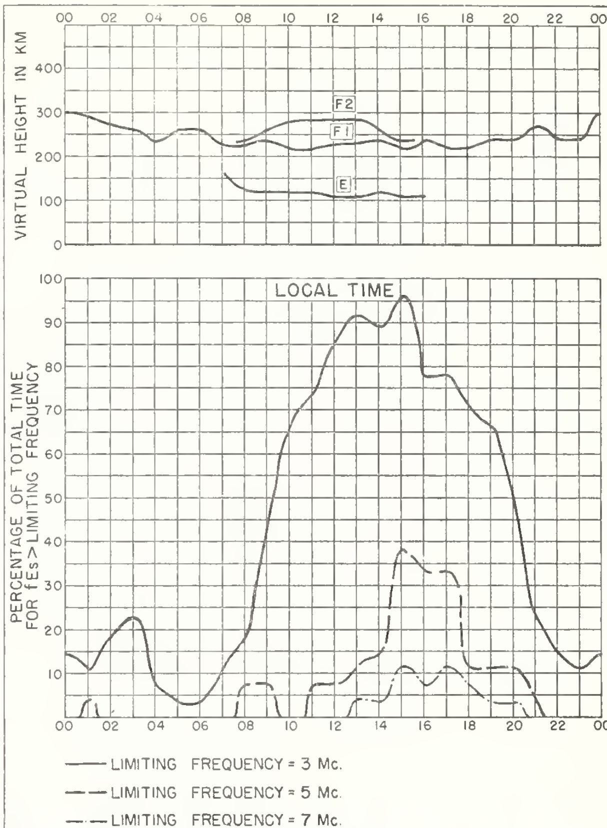


Fig. 50. FORMOSA, CHINA DECEMBER 1953

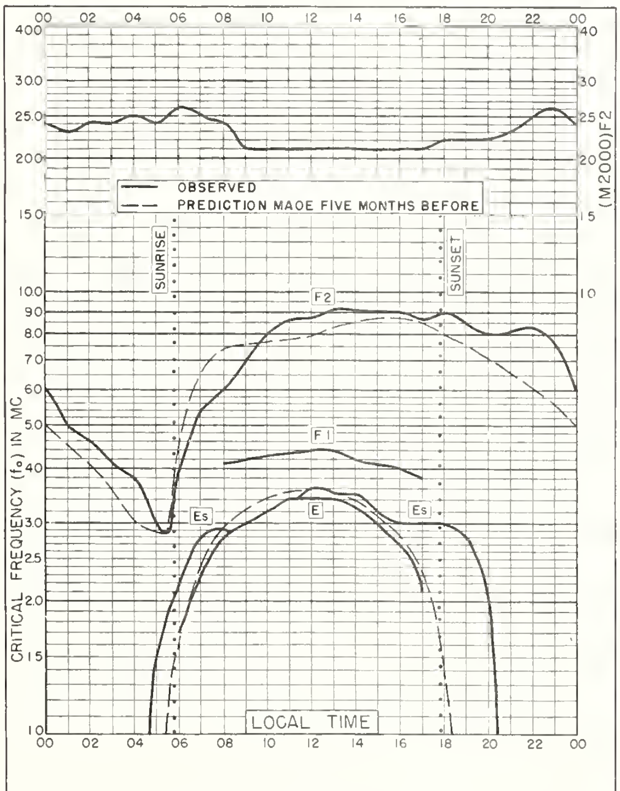
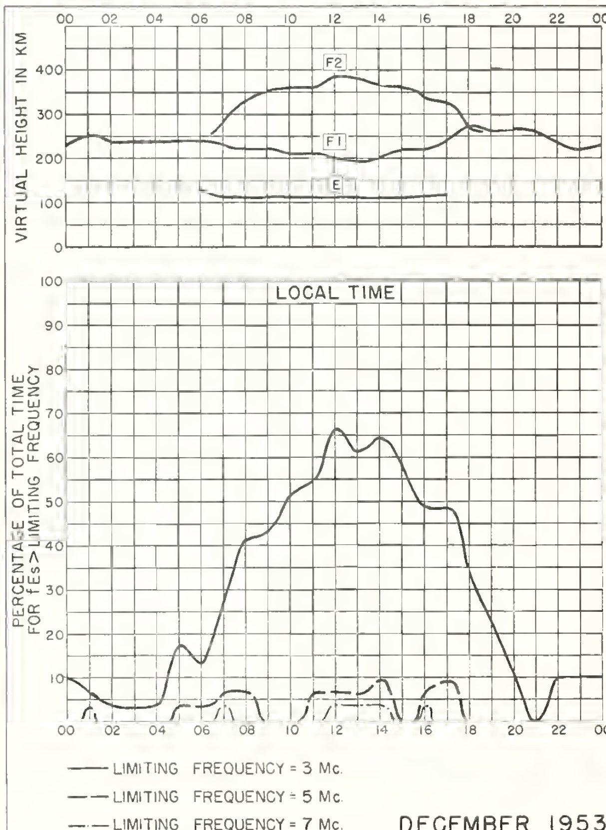


Fig. 51. LEOPOLDVILLE, BELGIAN CONGO
4.3° S, 15.3° E DECEMBER 1953



DECEMBER 1953
Fig 52. LEOPOLDVILLE, BELGIAN CONGO

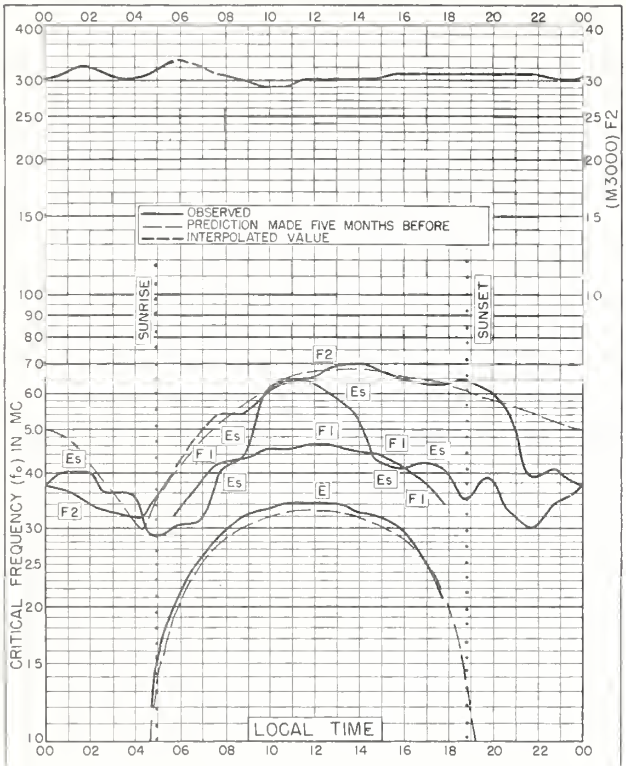
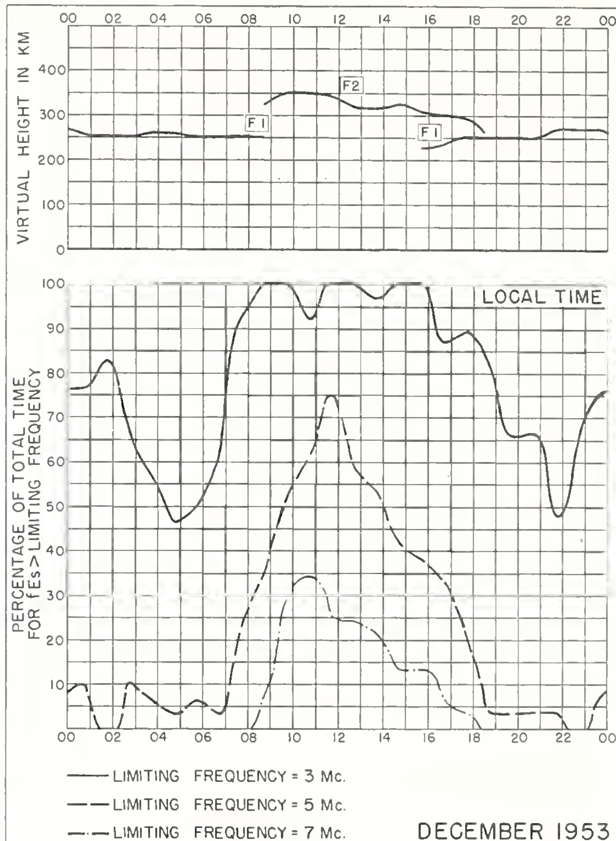


Fig. 53. WATHEROO, W. AUSTRALIA
30.3° S, 115.9°E DECEMBER 1953



DECEMBER 1953
Fig. 54. WATHEROO, W. AUSTRALIA

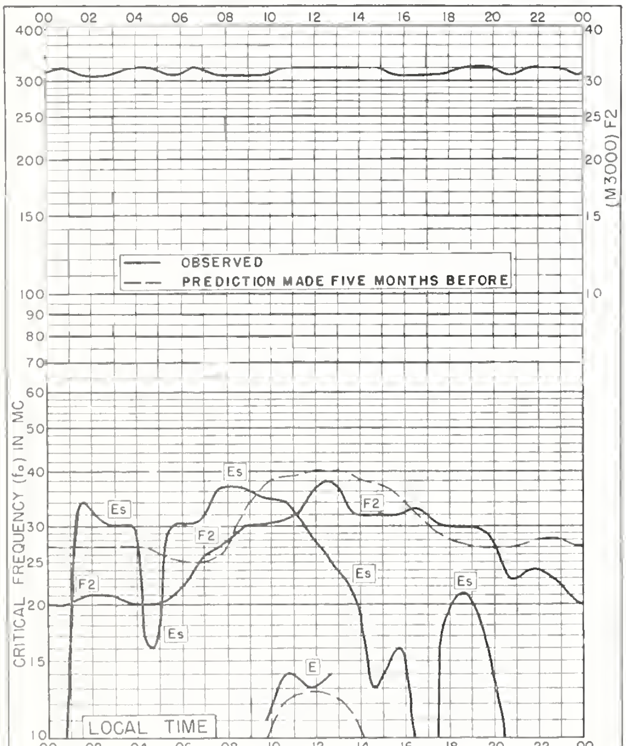
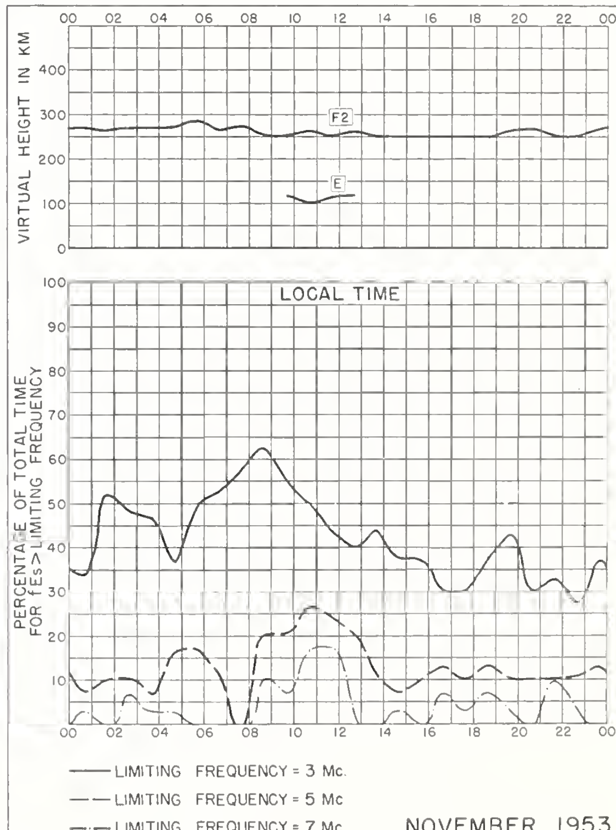


Fig. 55. RESOLUTE BAY, CANADA
74.7° N, 94.9° W NOVEMBER 1953



NOVEMBER 1953
Fig. 56. RESOLUTE BAY, CANADA

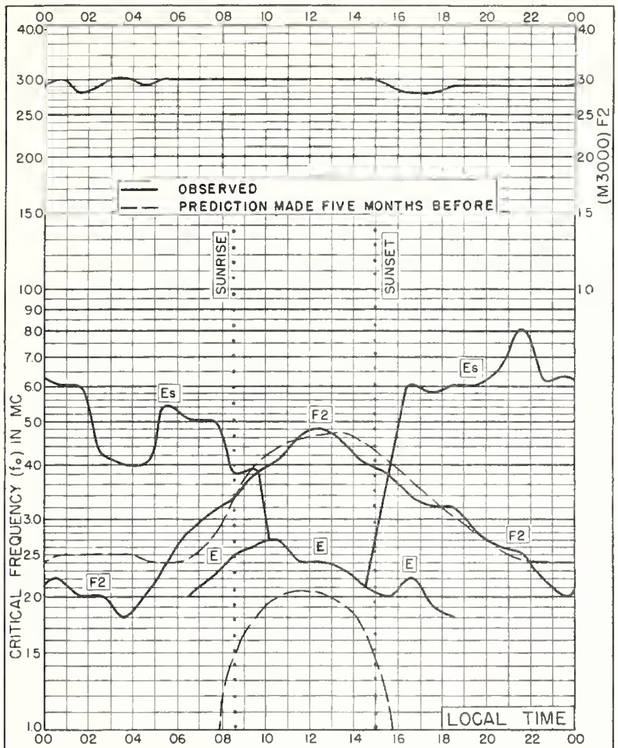


Fig. 57. BAKER LAKE, CANADA
64.3° N, 96.0° W NOVEMBER 1953

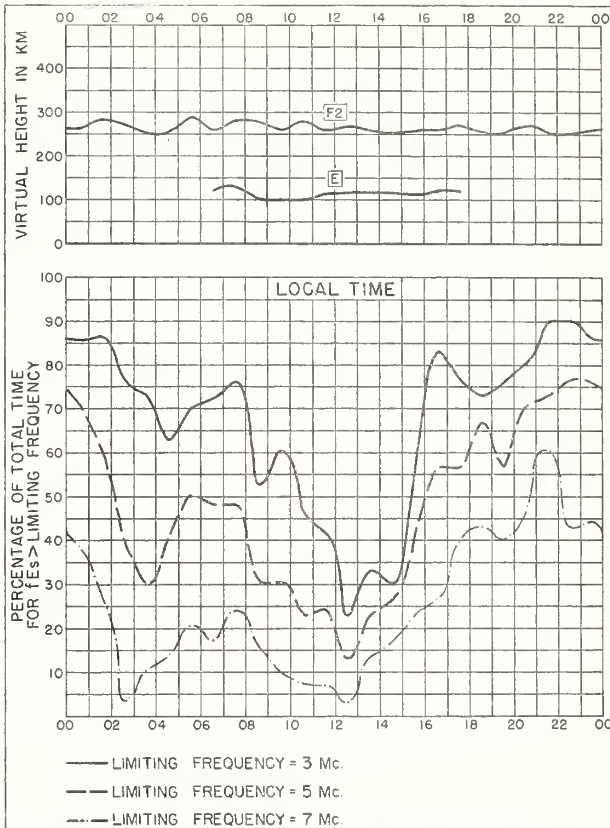


Fig. 58. BAKER LAKE, CANADA NOVEMBER 1953

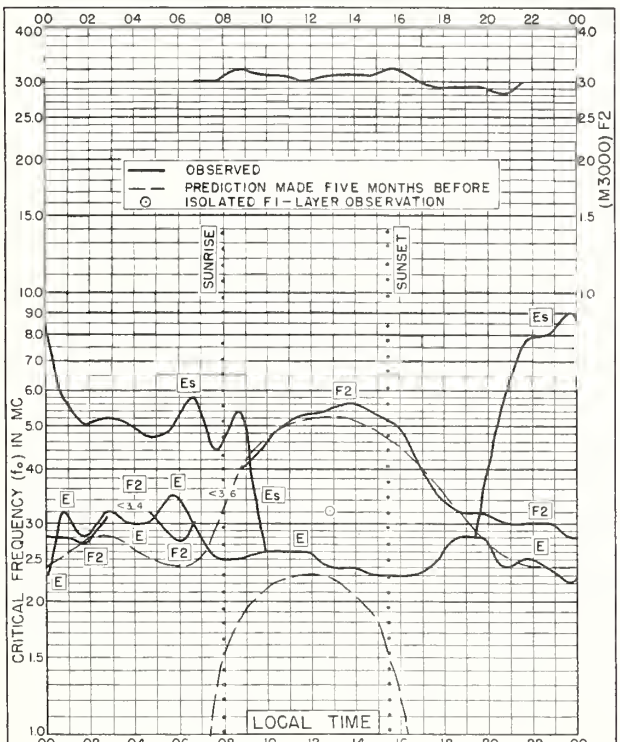


Fig. 59. CHURCHILL, CANADA
58.8° N, 94.2° W NOVEMBER 1953

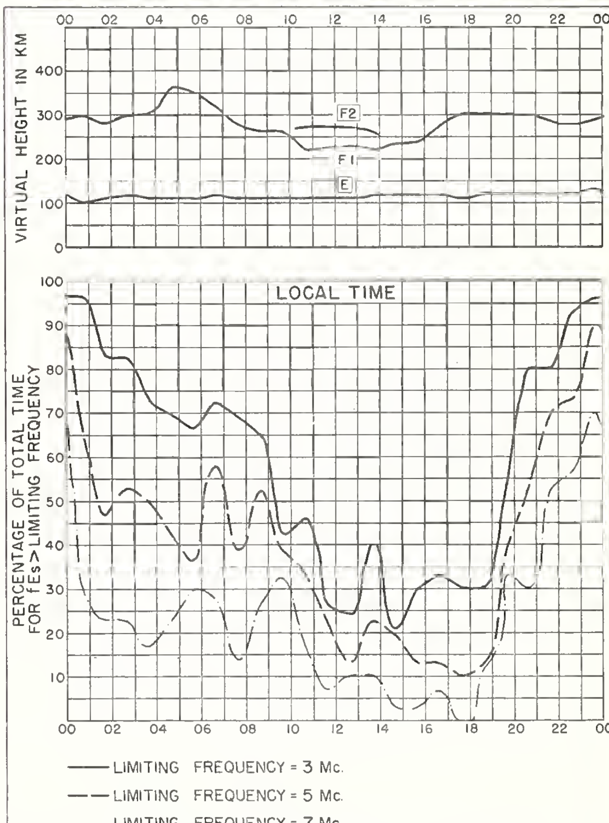


Fig. 60. CHURCHILL, CANADA NOVEMBER 1953

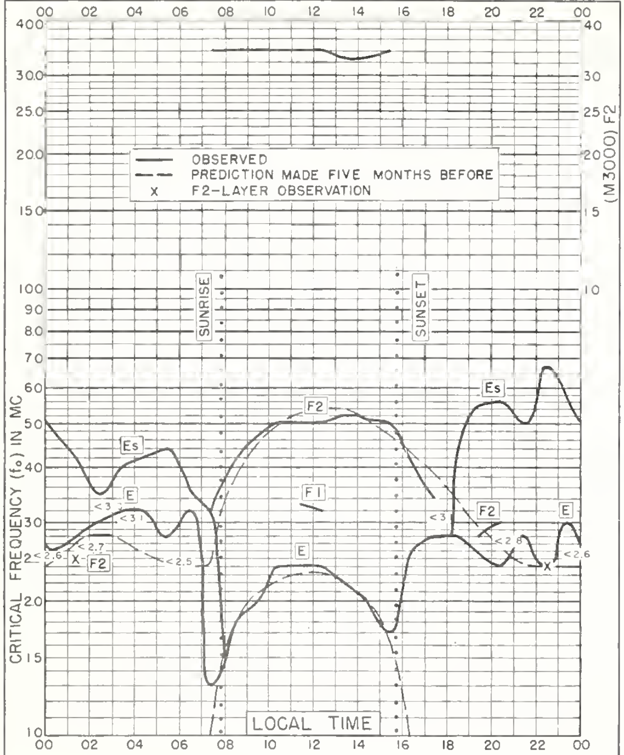


Fig. 61. FORT CHIMO, CANADA
58.1° N, 68.3° W NOVEMBER 1953

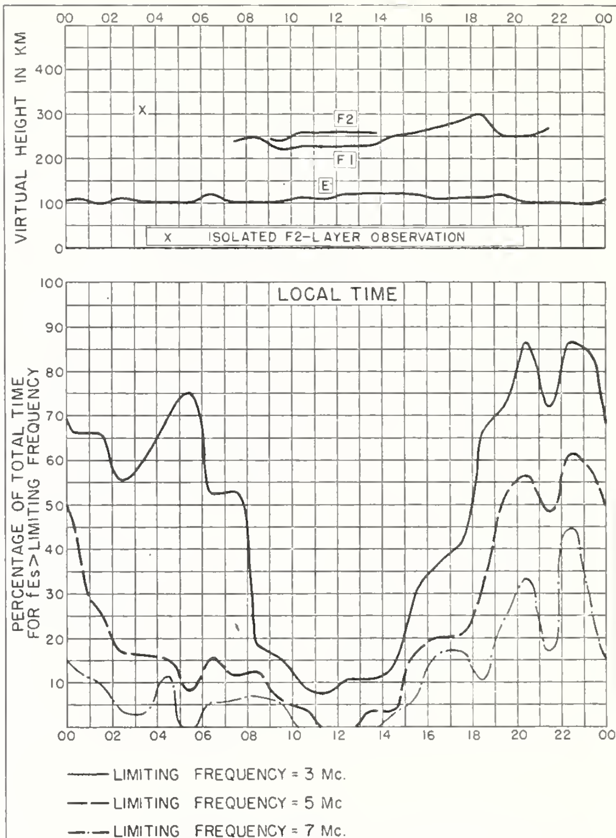


Fig. 62. FORT CHIMO, CANADA NOVEMBER 1953

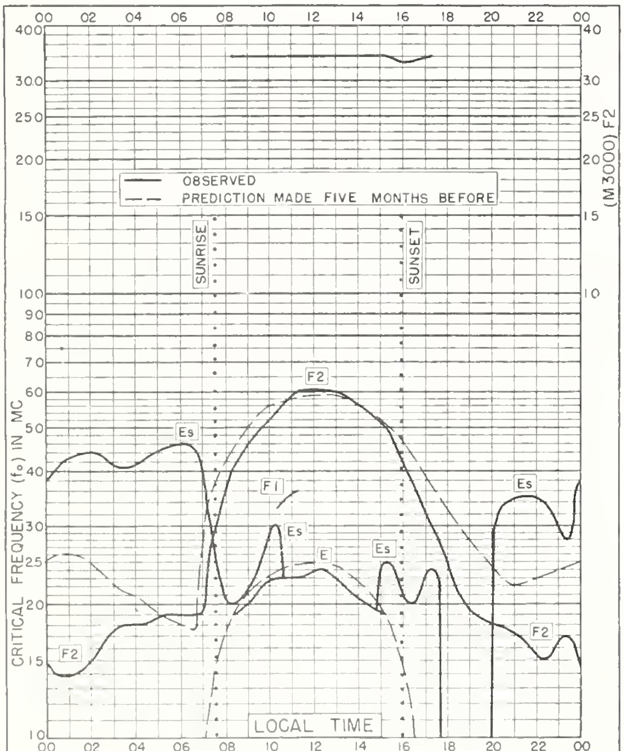
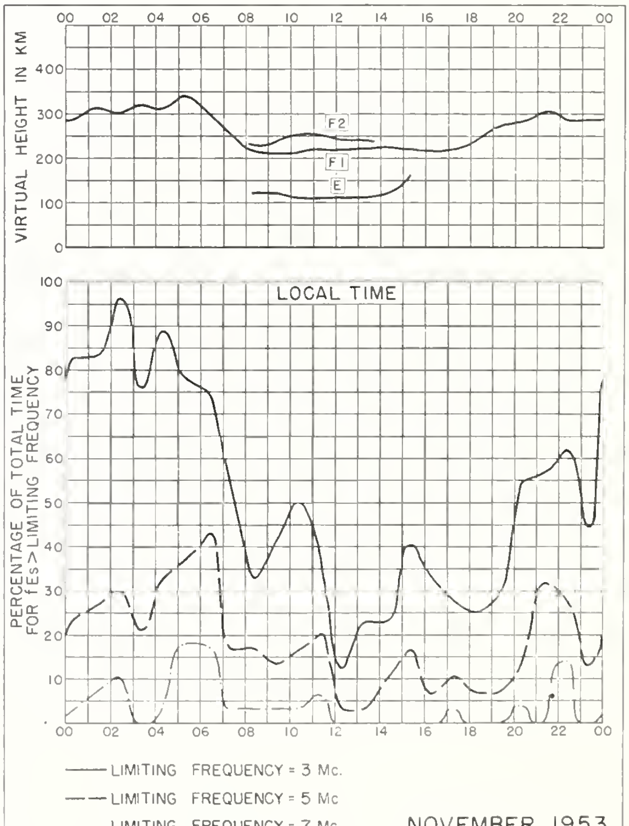


Fig. 63. PRINCE RUPERT, CANADA
54.3° N, 130.3° W NOVEMBER 1953



NOVEMBER 1953
Fig. 64. PRINCE RUPERT, CANADA

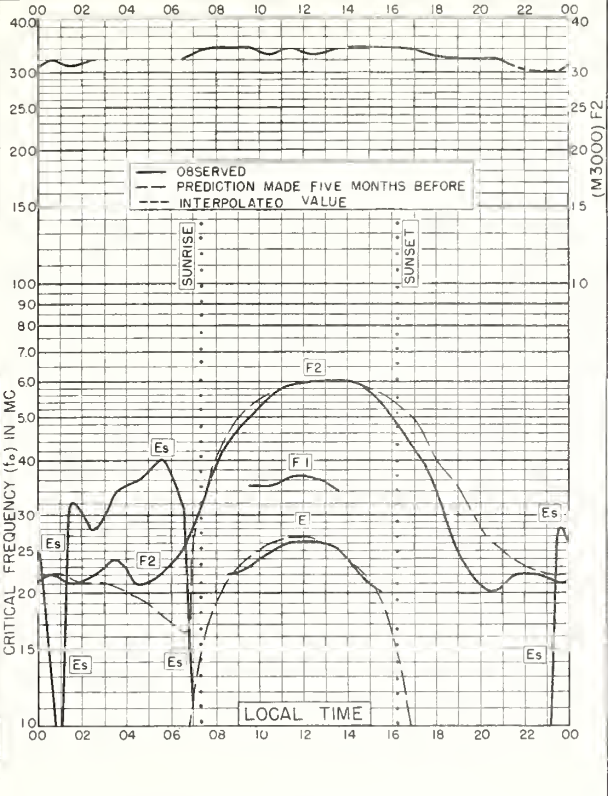


Fig. 65. WINNIPEG, CANADA
49.9°N, 97.4°W NOVEMBER 1953

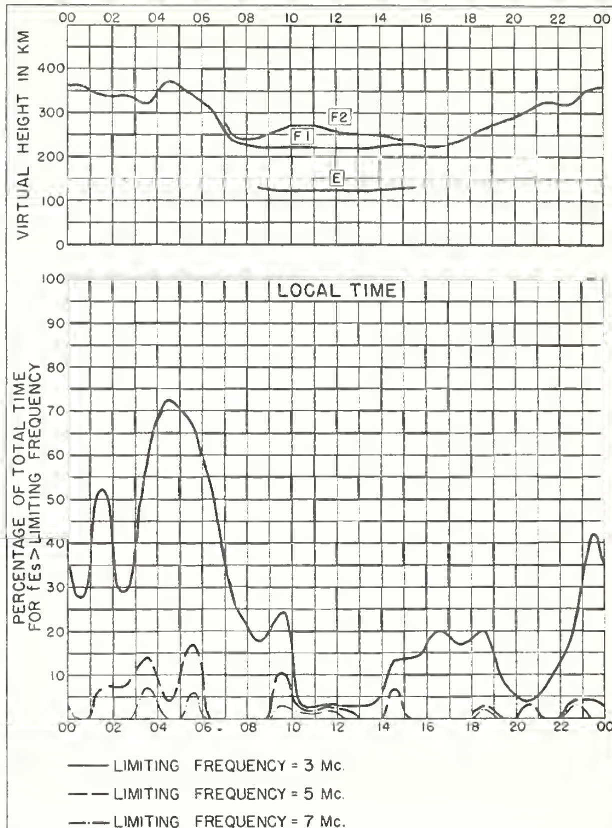


Fig. 66. WINNIPEG, CANADA NOVEMBER 1953

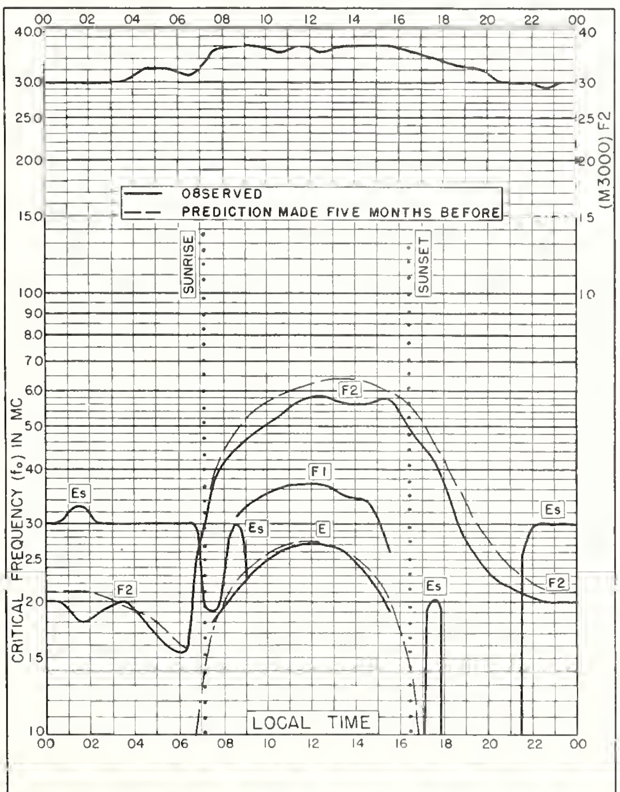
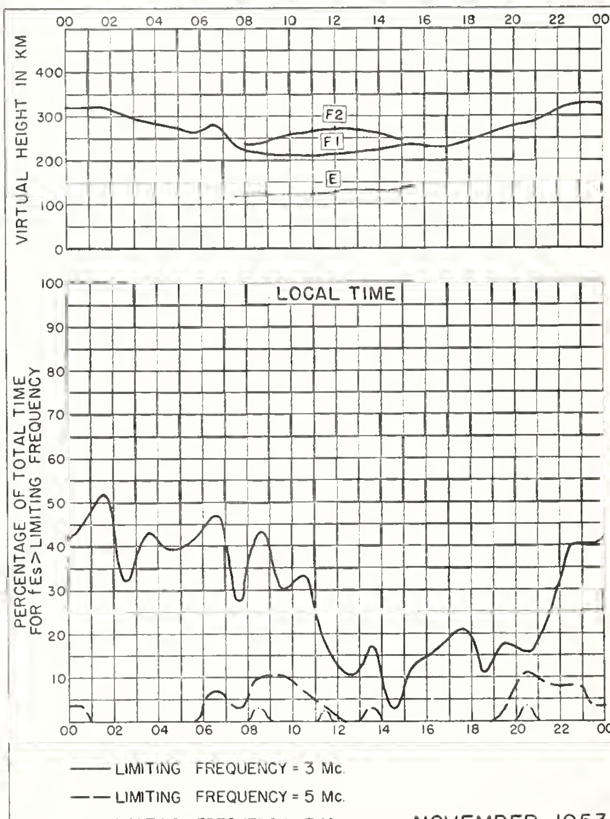


Fig. 67. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W NOVEMBER 1953



NOVEMBER 1953
Fig. 68. ST. JOHN'S, NEWFOUNDLAND

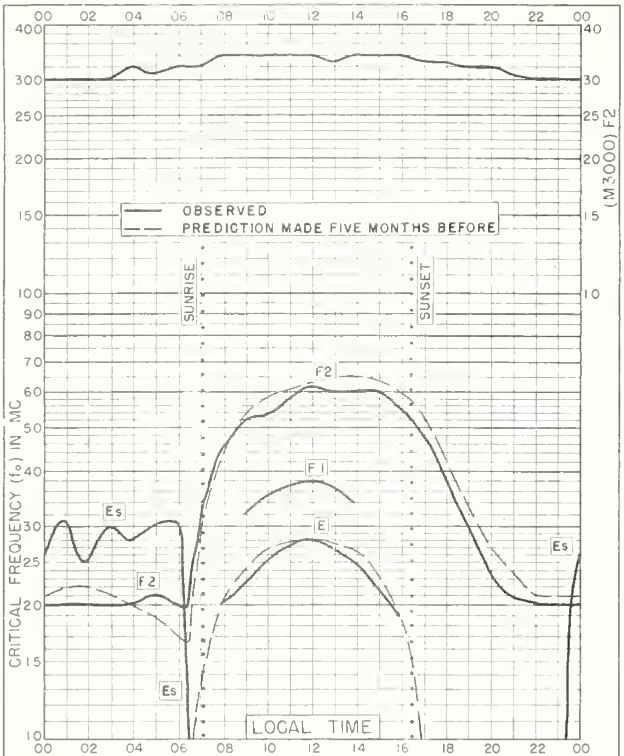


Fig. 69. OTTAWA, CANADA
45.4° N, 75.9° W NOVEMBER 1953

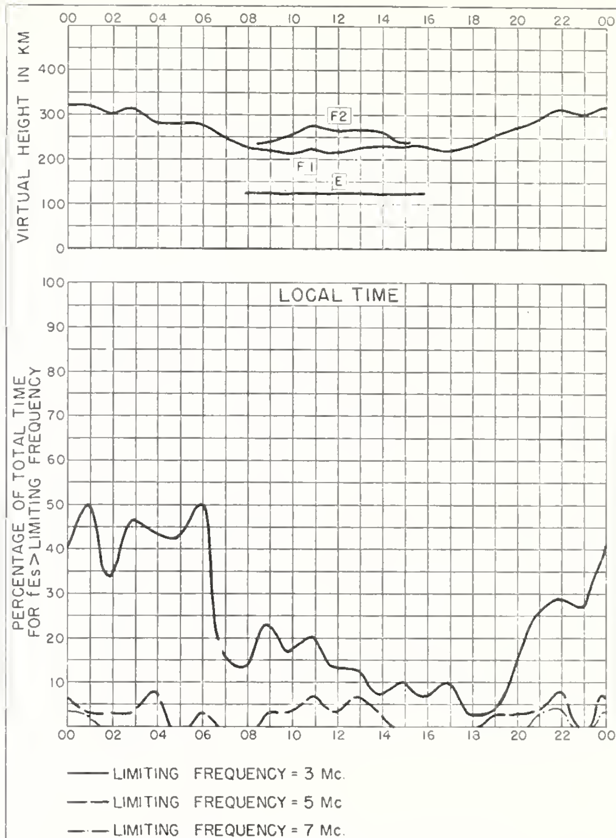


Fig.70. OTTAWA, CANADA NOVEMBER 1953

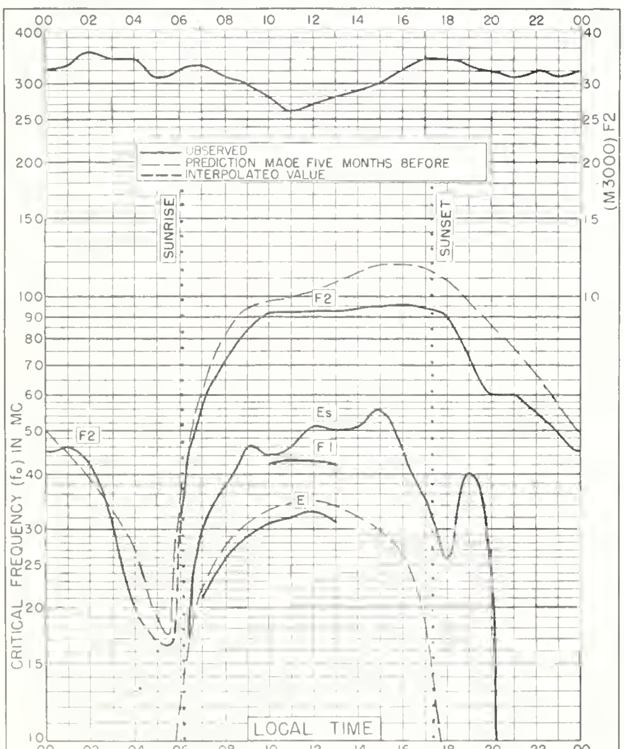


Fig. 71. BAGUIO, P.I.
16.4° N, 120.6° E NOVEMBER 1953

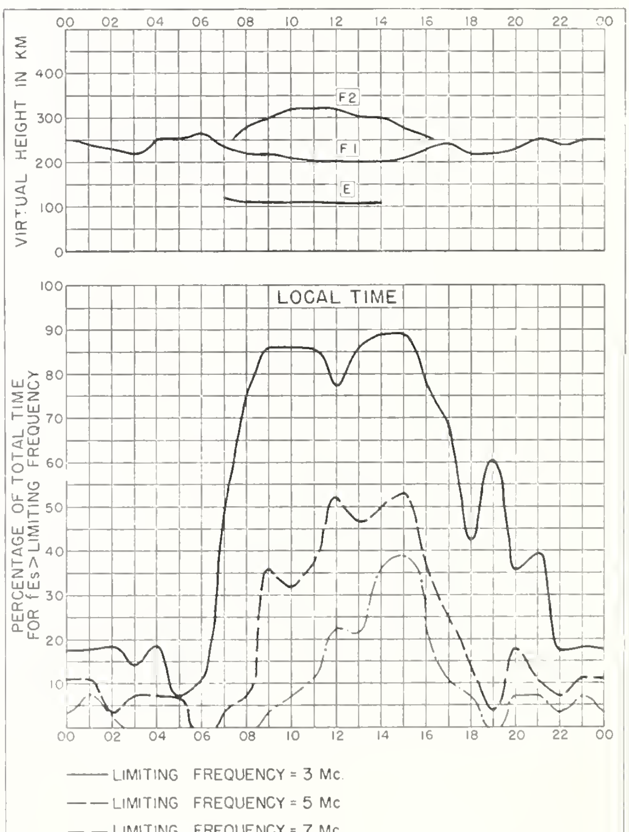


Fig 72. BAGUIO, P.I. NOVEMBER 1953

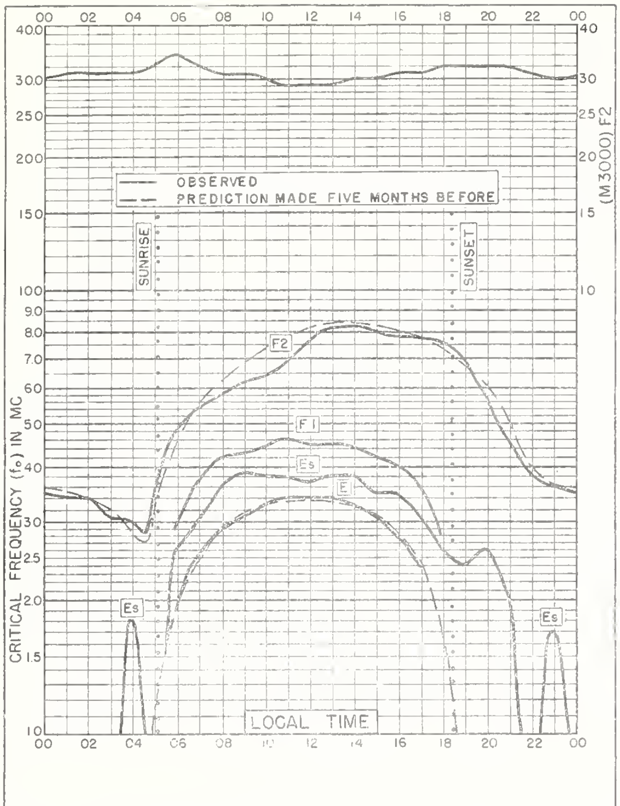
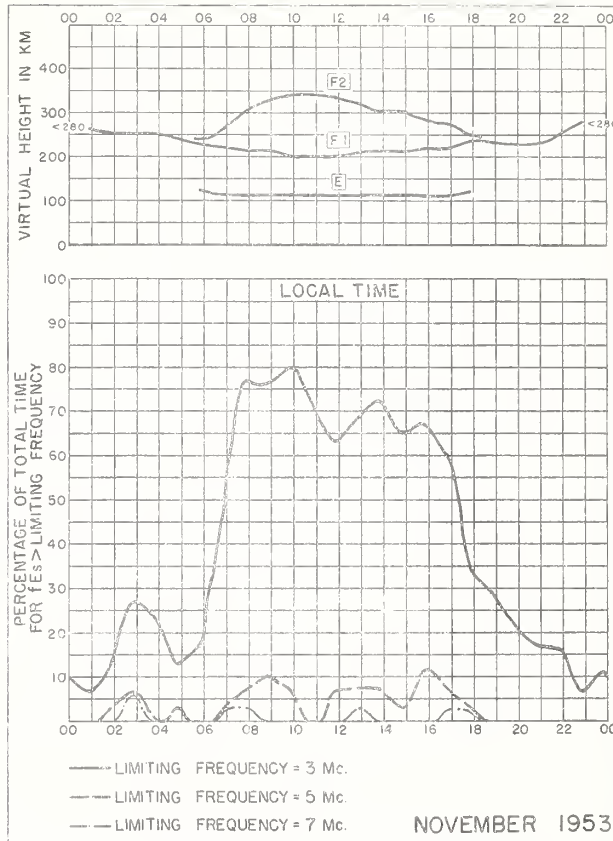


Fig. 73. JOHANNESBURG, UNION OF S. AFRICA
26.2° S, 28.1° E NOVEMBER 1953



NOVEMBER 1953
Fig. 74. JOHANNESBURG, UNION OF S. AFRICA

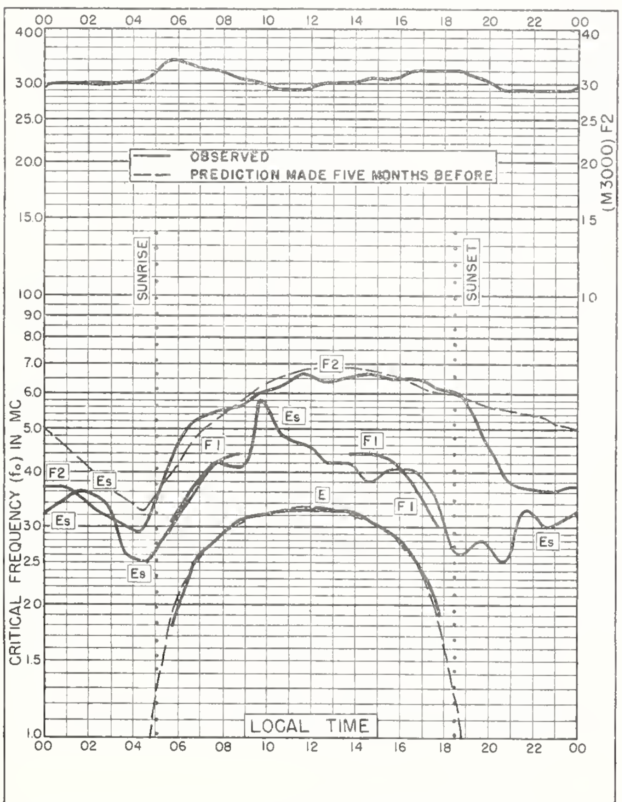
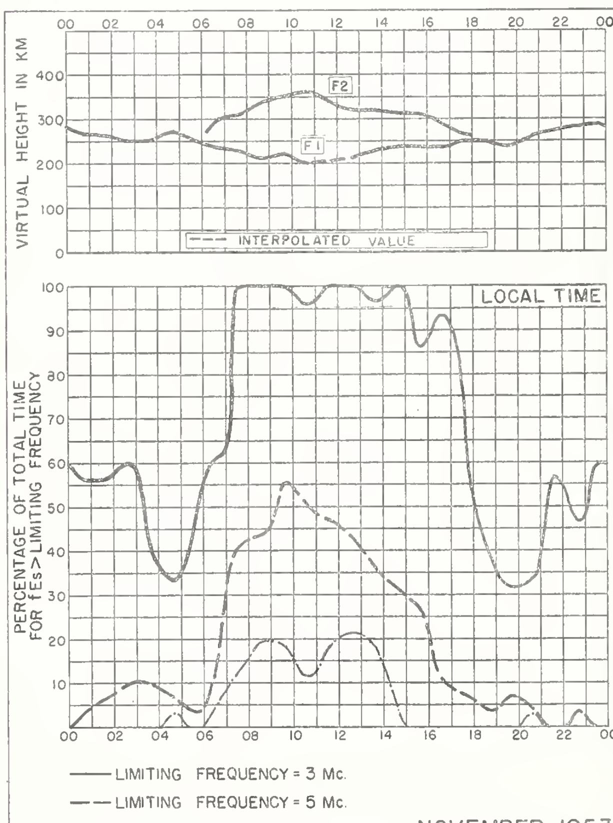


Fig. 75. WATHEROO, W. AUSTRALIA
30.3° S, 115.9° E NOVEMBER 1953



NOVEMBER 1953
Fig. 76. WATHEROO, W. AUSTRALIA

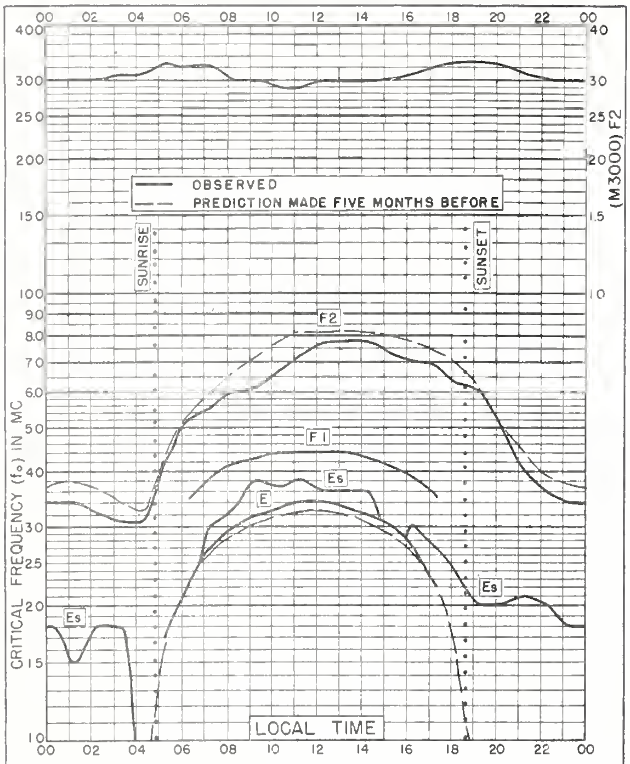


Fig. 77 CAPETOWN, UNION OF S. AFRICA
34.2° S, 18.3° E NOVEMBER 1953

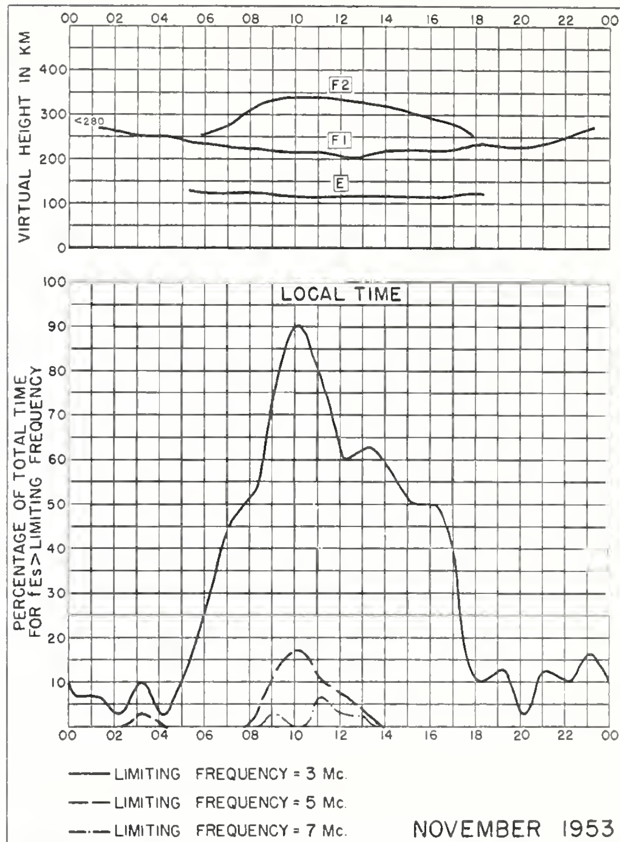


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Fig. 78. CAPETOWN, UNION OF S. AFRICA

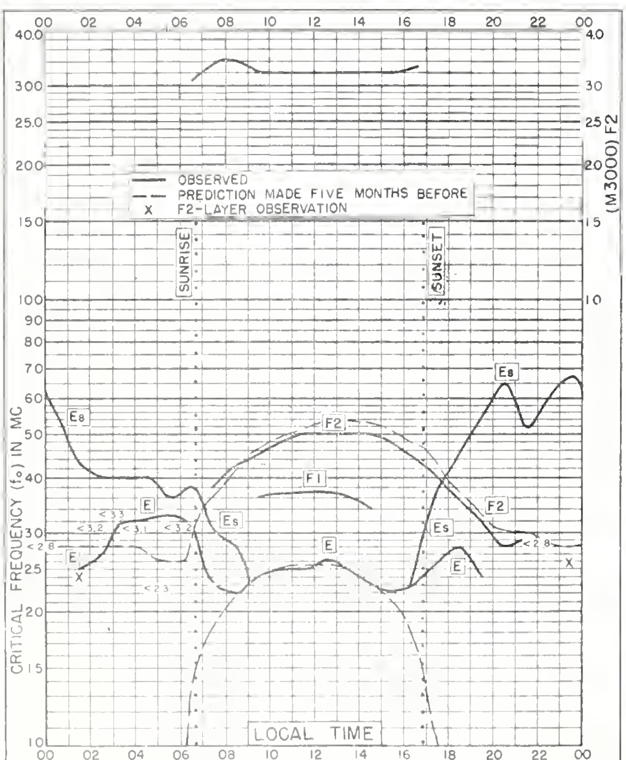

Fig. 79 FORT CHIMO, CANADA
58.1° N, 68.3° W OCTOBER 1953

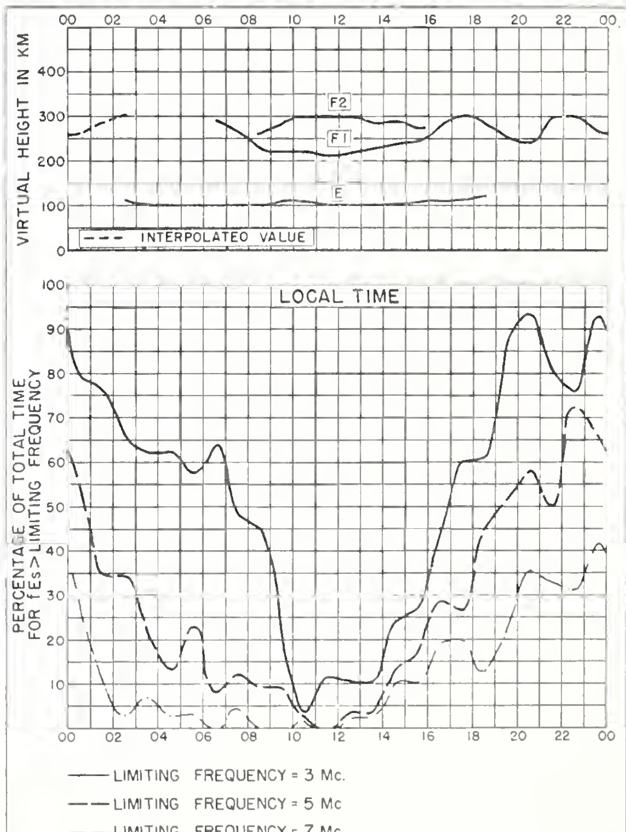

Fig. 80. FORT CHIMO, CANADA OCTOBER 1953

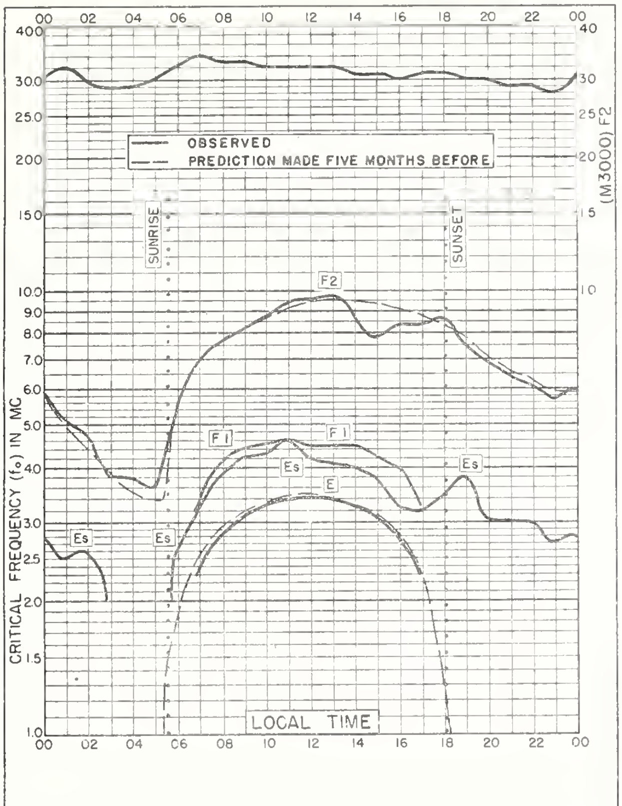

Fig. 81. RAROTONGA I.
21.3°S, 159.8°W OCTOBER 1953

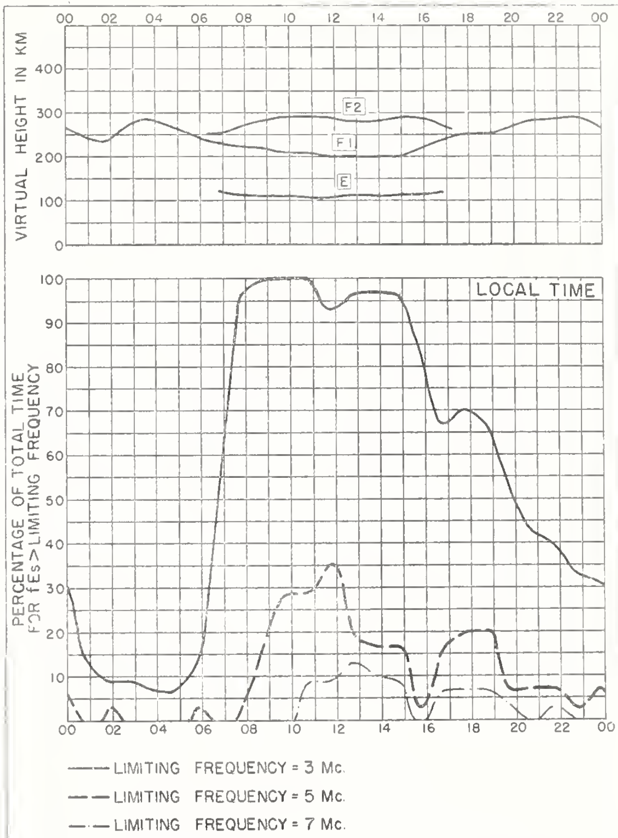

Fig. 82. RAROTONGA I. OCTOBER 1953

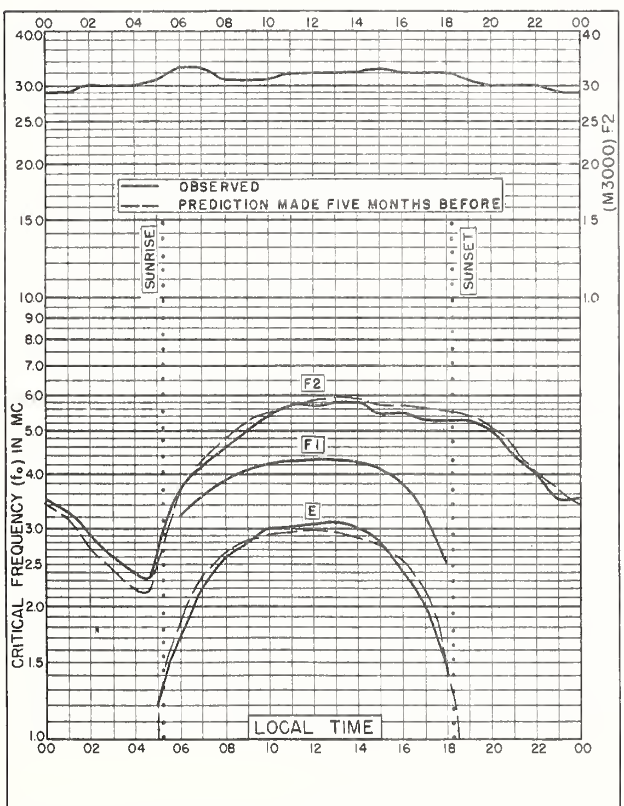

Fig. 83. CHRISTCHURCH, NEW ZEALAND
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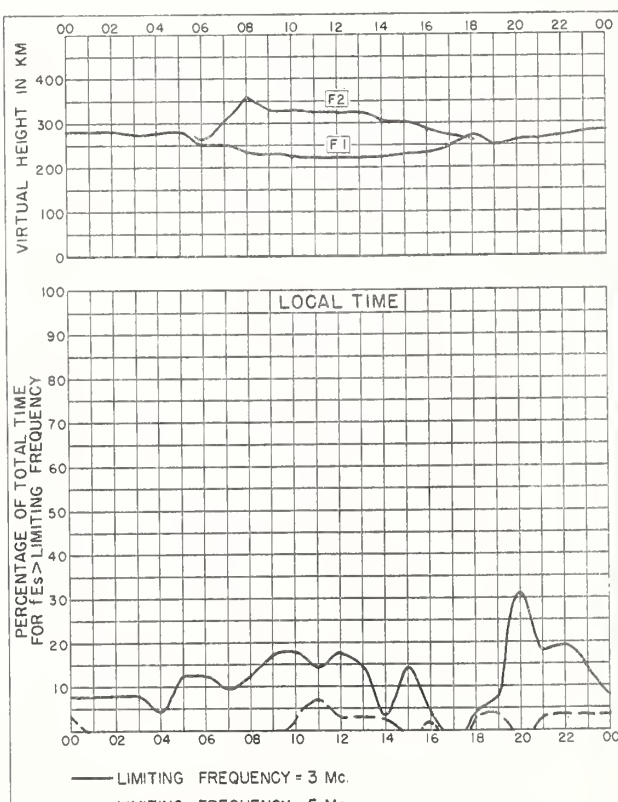


OCTOBER 1953
Fig. 84. CHRISTCHURCH, NEW ZEALAND

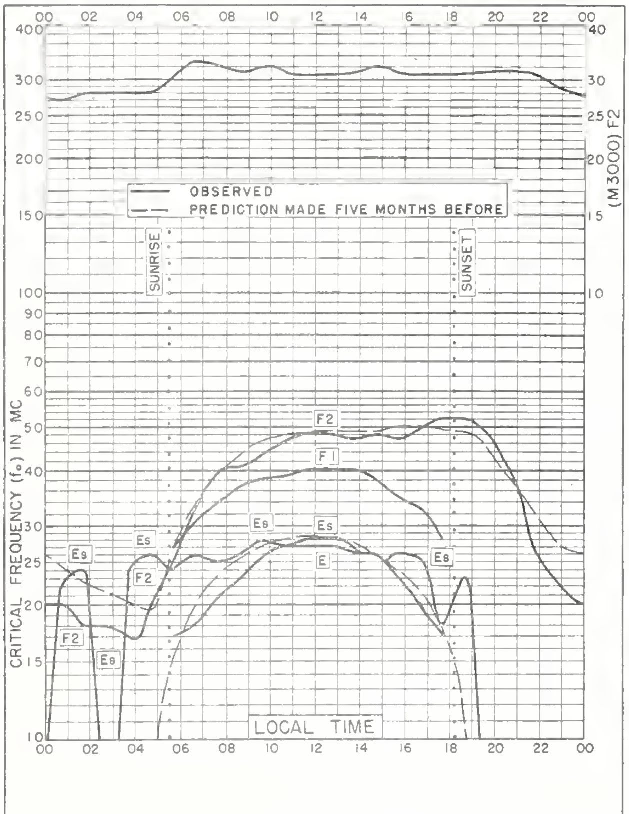


Fig. 85. INVERNESS, SCOTLAND
57.4° N, 4.2° W SEPTEMBER 1953

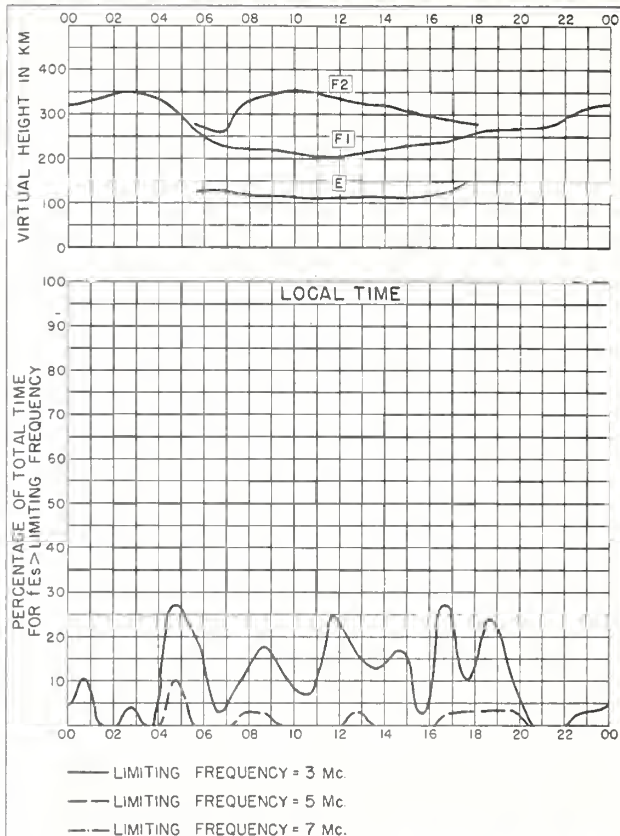


Fig. 86. INVERNESS, SCOTLAND SEPTEMBER 1953

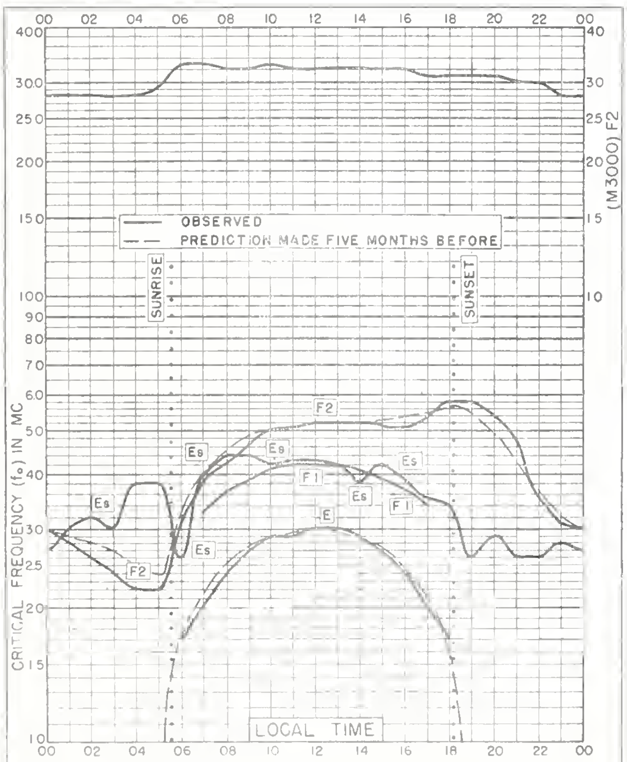
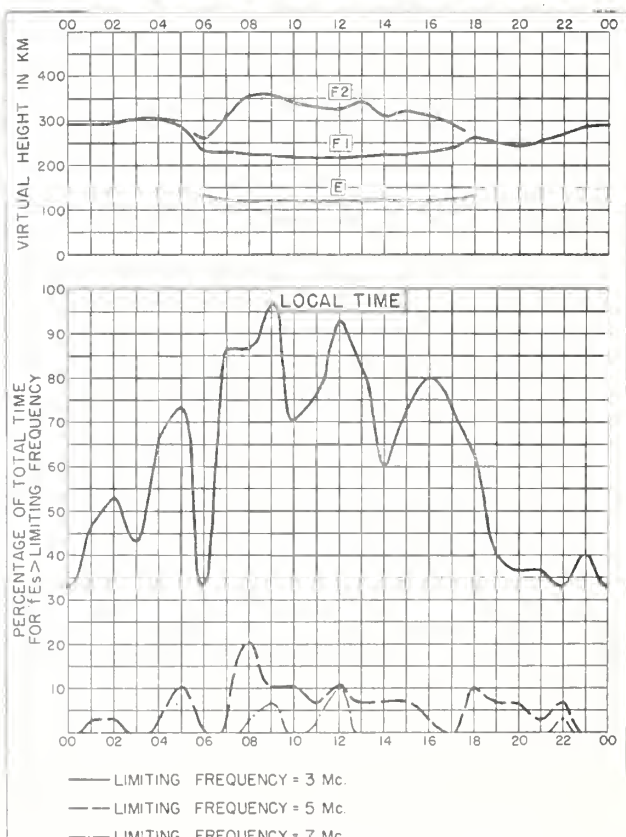


Fig. 87 SLOUGH, ENGLAND
51.5° N, 0.6° W SEPTEMBER 1953



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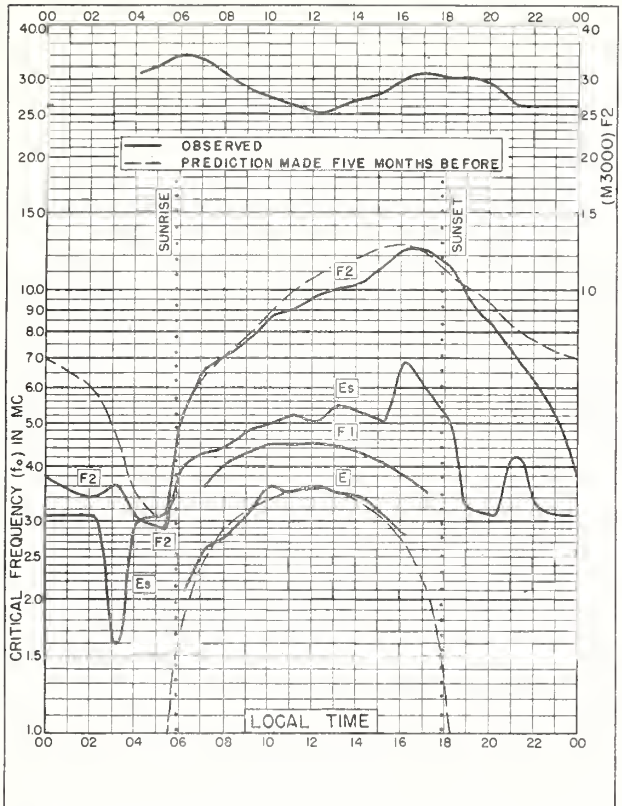

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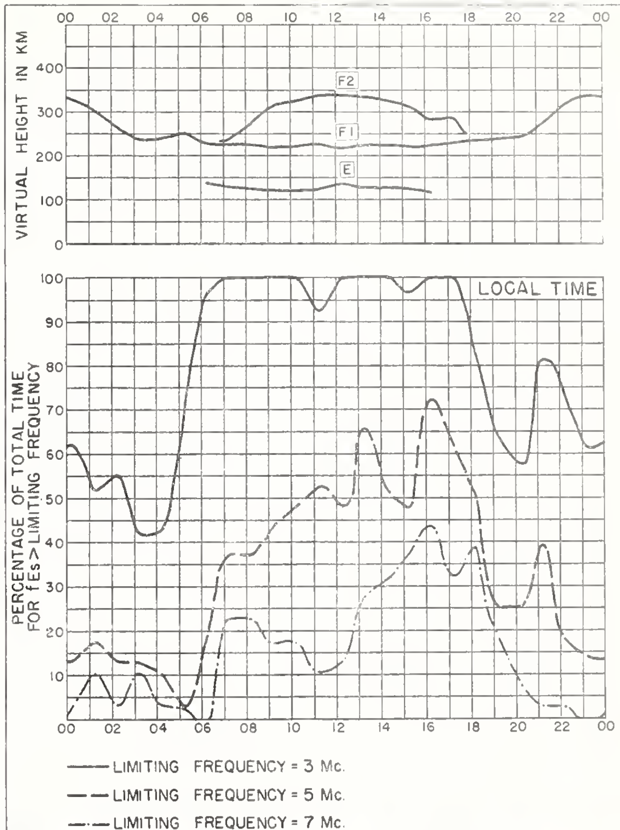

Fig. 90. KHARTOUM, SUDAN SEPTEMBER 1953

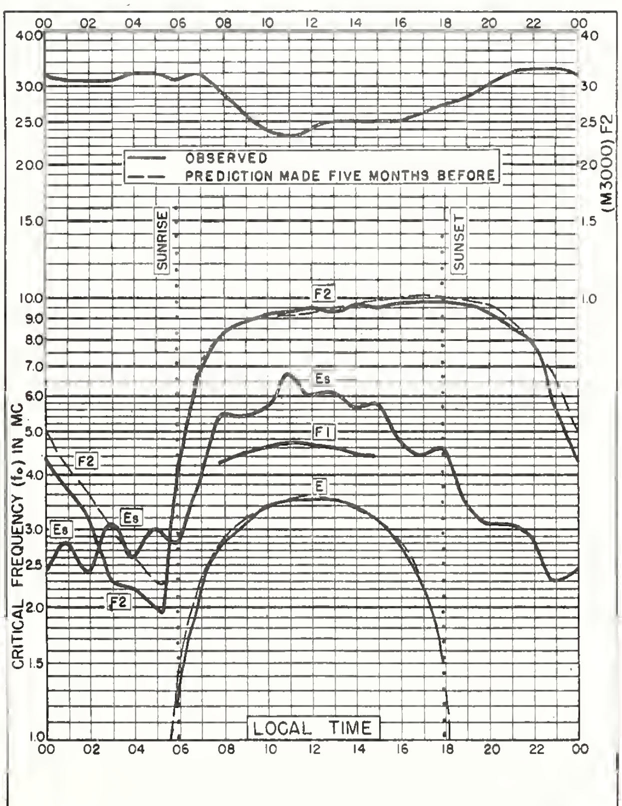

Fig. 91. SINGAPORE, BRITISH MALAYA
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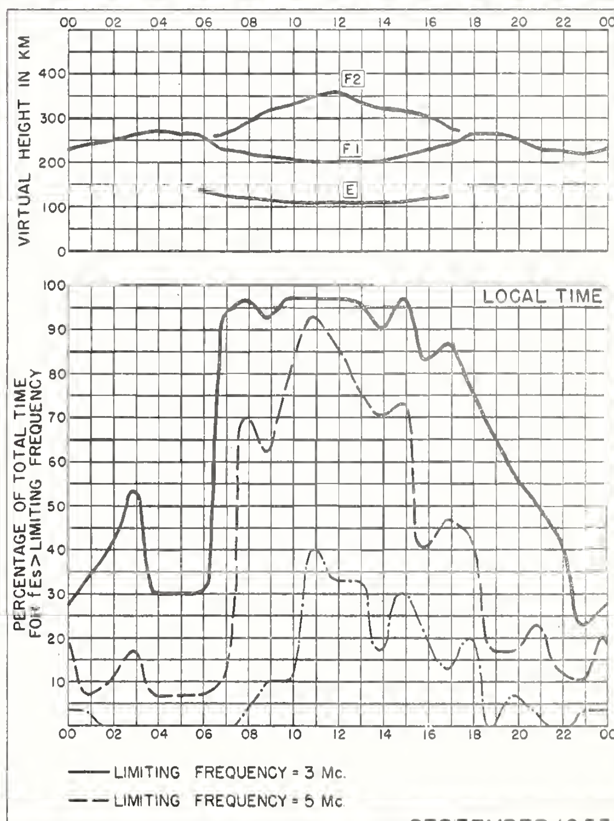

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Fig. 92. SINGAPORE, BRITISH MALAYA

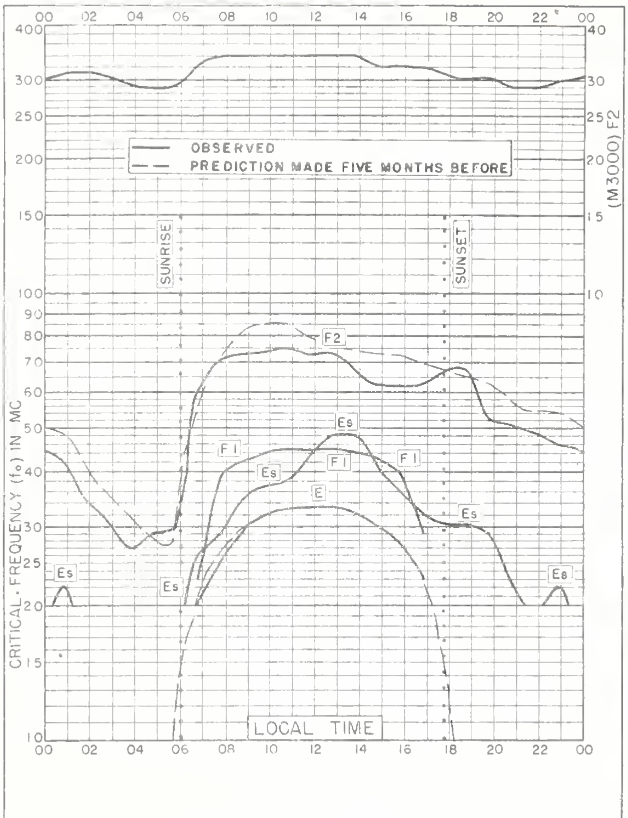

Fig. 93 RAROTONGA I.
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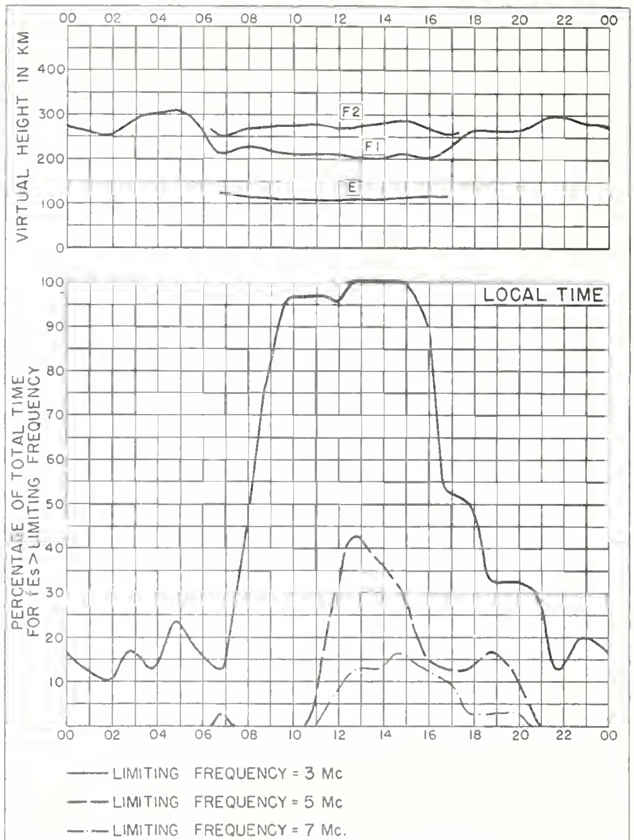

Fig. 94 RAROTONGA I. SEPTEMBER 1953

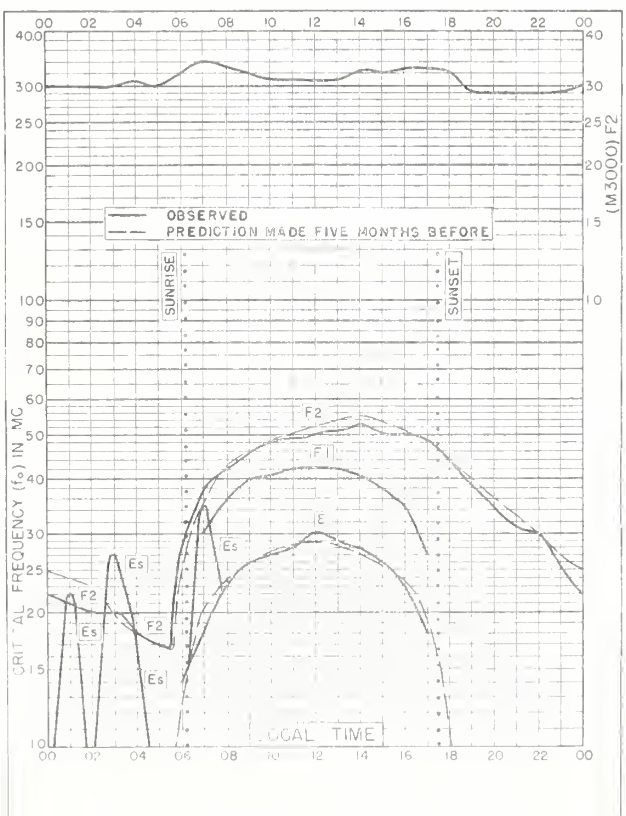

Fig 95. CHRISTCHURCH, NEW ZEALAND
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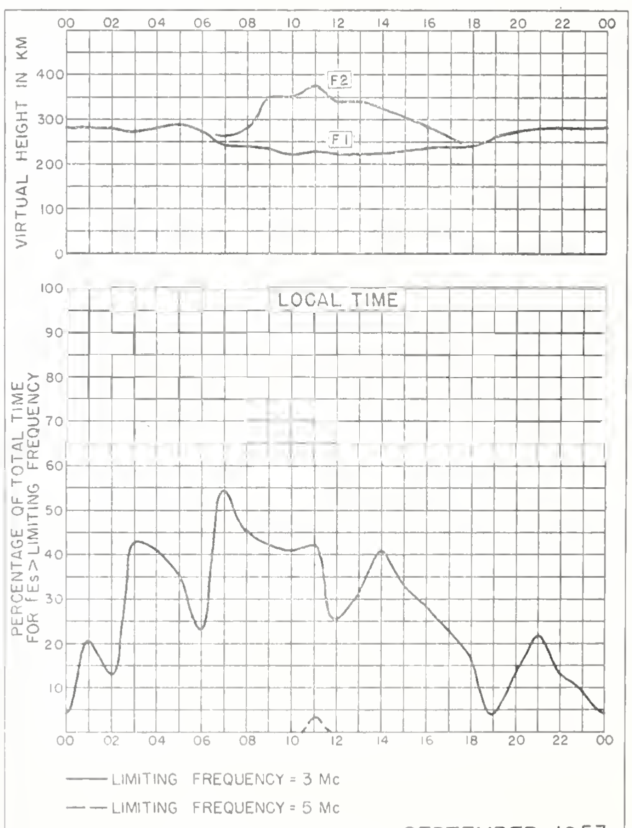

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NBS Circular 462. Ionospheric Radio Propagation.

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